

THE THOUGHTS WITHIN: COGNITIVE STYLES AS MEDIATORS BETWEEN
PERCEIVED PARENTING AND SYMPTOMS OF DEPRESSION AND ANXIETY

by

Tiffany Melissa Meites, M.A.

c. 2013

Submitted to the graduate degree program in Psychology and the Graduate Faculty of the
University of Kansas in partial fulfillment of the requirements for the degree of Doctor of
Philosophy.

Rick E. Ingram, Ph.D.
Chairperson

Monica Kurylo, Ph.D.

Sarah Kirk, Ph.D.

Wei Wu, Ph.D.

Alice Lieberman, Ph.D.

Date Defended: __5/13/2013__

The Dissertation Committee for Tiffany Melissa Meites certifies that this is the approved version
of the following dissertation:

THE THOUGHTS WITHIN: COGNITIVE STYLES AS MEDIATORS BETWEEN
PERCEIVED PARENTING AND SYMPTOMS OF DEPRESSION AND ANXIETY

Rick E. Ingram, Ph.D., Chairperson

Date approved: May 13th, 2013

Abstract

Given the high degree of comorbidity between depression and anxiety and their impact on quality of life, knowledge of shared and unique factors implicated in their development is critical. Although research has linked parenting behaviors and negative schemas with their development, little is known about how specific parenting behaviors affect schema development. The present study explored the relation between perceived parenting, dysfunctional attitudes about the self and anxiety, and aspects of affective symptomatology. Lower levels of parental care were associated with both dysfunctional attitudes and anxiety sensitivity, and parental overprotection was specifically associated with negative beliefs about anxiety. Although dysfunctional attitudes uniquely predicted symptoms of depression, beliefs about anxiety were nonspecific predictors of affective symptomatology. The present findings provide support for assessing specific elements of parenting, cognitive styles, and affective symptomatology independently. Implications for understanding the development of affective disorders and identification of targets for preventive and treatment interventions are discussed.

Acknowledgements

I would like to extend special thanks to those individuals who were involved in this dissertation.

A special thanks to my advisor, Dr. Rick Ingram for his guidance, advice, and support throughout my graduate career. To Monica Kurylo, Ruth Ann Atchley, Sarah Kirk, Wei Wu, and Alice Lieberman, gratitude is owed for their suggestions and interest in this project, as well as their willingness to serve on my committee. Thanks also to Chi Vu, Dana Piper, Nam-Chi Phuong; Claire Gorey; and Emily Swallow, the research assistants for their invaluable help with collecting and managing the data for this research. Appreciation is extended to Aaron Boulton and Kyle Lang, consultants at the KU Center for Research Methods and Data Analysis, for their help with proofreading the syntax for analyzing the findings.

Finally, special thanks to my family, particularly my parents, Herb and Karen Meites, for their love and support and to Diego and Emma for their good-natured acceptance of the time spent writing instead of on walks. Gratitude is extended to fellow intern and dissertation-writer Summer Ibarra for encouragement during the writing process. Thanks also to Melissa Barter-Bradley and Sterling Bradley, Linda Routledge, and my graduate and intern classmates for their support.

Table of Contents

INTRODUCTION

Prevalence of depression and anxiety	1
Theories of the development of depression and anxiety	2
Parental bonding and psychopathology	4
Other aspects of parenting and affective symptomatology	11
Rationale for present study	12
Present study	13

METHOD

Participants	15
Measures	15
Procedure	20

RESULTS

Analytic strategy	20
Missing data	21
Effect on mood	21
Affective symptomatology factors	22
Cognitive factors	24
Model	25

DISCUSSION

The mediation model	28
Relations between parental bonding, cognitive styles, and symptomatology	30

Effect of family history of affective symptomatology	40
Summary and implications	42
Limitations	44
Future directions	46
REFERENCES	49
TABLES	63
FIGURE	78
APPENDICES	79

Introduction

Prevalence of Depression and Anxiety

With estimates of lifetime prevalence ranging from 6 to 25%, depression is one of the most prevalent mental disorders (see Kessler & Wang, 2009 for review). An estimated 30 million adults in the United States will meet criteria for Major Depressive Disorder during their lifetime. Further, community surveys have identified that nearly 20% of adults and 50% of children and adolescents report experiencing significant symptoms of depression in the previous six months (Kessler, Avenevoli, & Merikangas, 2001).

A significant percentage of those diagnosed with depression also suffer from an anxiety disorder. In one study exploring the comorbidity between anxiety and depression, 47.2% of individuals meeting criteria for depression also met criteria for a comorbid anxiety disorder (Regier, Rae, Narrow, Kaelber, & Schatzberg, 1998). Other studies have reported similar rates, with some higher rates noted for lifetime comorbidity (see Kessler & Wang, 2009 for review). The presence of another disorder, particularly an anxiety disorder, has been associated with more chronic depression, increased frequency and duration of depressive episodes, greater symptom severity, heightened risk for suicide (e.g., Hranov, 2007; Kessler & Wang, 2009). Some evidence suggests that anxiety disorders may even act as risk factors for the later development of depression (Horn & Wuyek, 2010).

In sum, depression and anxiety are highly comorbid with significant impact on individuals' functioning; such comorbidity, however, can make it difficult to disentangle unique effects of each type of disorder. Identification of common and unique risk factors is thus critical to understanding the relation between depression and anxiety. The present paper examines the current understanding of theories behind the development of depression and anxiety. Research

on parental bonding, which has been implicated in the development of affective symptomatology is also reviewed. Following review of the literature, rationale and findings from an investigation of the relation between parenting, cognition, and affective symptomatology are discussed.

Theories of the Development of Anxiety and Depression

Efforts to understand the development of depression and anxiety have resulted in the development of several theories, including Beck's cognitive theory (1967), attachment theory (Bowlby, 1973, 1980), and the tripartite model of anxiety and depression (Clark & Watson, 1991). According to Beck's (1967) cognitive theory of depression, individuals interpret their understanding of themselves, the world, and the future through schemas, cognitive "short-cuts" that facilitate the rapid understanding of information. Beck posited that individuals who are vulnerable to developing depression hold negative schemas about the world and interpret information through a negative perspective; depressive schemas are assumed to focus on deprivation or loss. For example, if student vulnerable to developing depression received a poor grade on a paper, that student might assume that he/she is an academic failure and will never pass the course. Research on the relation between negative schemas and depression has generally supported the role of schemas in vulnerability to depression, particularly through their relation to stress (e.g., Eberhart, Auerbach, Bigda-Peyton, & Abela, 2011). These negative schemas are assumed to be global, affecting all situations, stable, and internal, such that individuals attribute personal responsibility to the causes of events. The development of schemas was theorized to occur during childhood as a result of interactions with parents and/or modeling of parental behaviors.

A similar pattern of the development of vulnerability to anxiety disorders was also specified by Beck, although the content of schemas is thought to differ (Beck & Clark, 1988).

For schemas predisposing vulnerability to anxiety, themes are assumed to be perceived physical or psychological threat. Given the presence of an adequate stressor, associated schemas (e.g., performance related following receipt of an evaluation) should be activated, resulting in negative cognitions; with repeated exposure and activation of negative schemas, anxiety or depressive symptoms may develop. Negative schemas of isolation, loss, and vulnerability have also been linked with the presence of anxiety disorders, including Obsessive-Compulsive Disorder (e.g., Atalay, Atalay, Karahan, & Çaliskan, 2008), Panic Disorder (e.g., Hedley, Hoffart, & Sexton, 2001) and Social Phobia (e.g., Pinto-Gouveia, Castilho, Galhardo, & Cunha, 2006).

Although Beck (1976) conceptualized vulnerability to be related to the development of negative cognitive schemas, Bowlby (1973, 1980) viewed vulnerability as a function of dysfunctional schemas developed as a result of relationships with others. Focusing on patterns of behavior during interactions between infants and their caregivers, he identified three attachment styles; styles were defined as typical patterns of responses to situations. *Securely attached* infants were expected to tolerate separation from caregivers well and make appropriate use of reassurance upon the caregivers' return. In contrast, *anxious-ambivalent* infants were expected to become anxious when separated from caregivers and alternately seek and avoid reassurance. Finally, *avoidant infants* were presumed to display little distress when separated from caregivers while avoiding reassurance.

According to this model, infants are expected to develop an understanding about the self and the world through their interactions with caregivers - a framework expected to guide information processing throughout the infant's life as well as relationships with others. Infants with an insecure (anxious-ambivalent or avoidant) attachment style are thus assumed to be more likely to develop an inadequate understanding of the self and the world and have difficulty using

relationships effectively to seek reassurance or test assumptions about the world. As such, insecurely attached individuals are expected to be at increased risk for developing anxiety or depression. Several studies have found support for an association between insecure attachment and anxiety and depression (see Davila, Ramsay, Stroud, & Steinberg, 2005 for a review).

Each of these theories posits that depression and anxiety share some common factors. One way of understanding these common factors is to explore shared precursors to these diatheses. Both cognitive approaches (Beck, 1967) and attachment theory (Bowlby 1973, 1980) stress the importance of early life experiences. Specifically both theories emphasize the role parenting plays in the development of schemas for understanding the world and in relationships with others. One method for studying parenting has been to assess the relation between parental bonding and psychopathology.

Parental Bonding and Psychopathology

Conceptualized as a set of parenting behaviors, parental bonding was initially associated with attachment theory. Core features of parental bonding are typically considered to be *care* (level of warmth and nurturing provided) and *protection* (level of parental concern and interference for a child's safety). In line with attachment and cognitive theories, optimal bonding, as conceptualized by the combination of high levels of care and appropriate levels of protection, is assumed to produce the necessary foundation for healthy psychological functioning. Conversely other types of parental bonding should be associated with increased vulnerability to psychological concerns.

Research has supported these conceptualizations, with low levels of care and high levels of protection associated with increased risk for psychopathology (e.g., Canetti, Bachar, Galili-Weisstub, Kaplan, & Shalev, 1997; Enns, Cox, & Clara, 2002b; Gladstone & Parker, 2005;

Lima, Mello, & de Jesus Mari, 2010; Rapee 1997). Poor parental bonding has also been found to predict both depression and anxiety (Blatt & Homann, 1992; Grotmol et al., 2010; Ingram, Miranda, & Segal, 1998; Lima et al., 2010; Parker, 1982; Pedersen, 1994). Some evidence suggests that maternal bonding, particularly low levels of maternal care, plays a stronger role than paternal bonding (Ingram, Overbey, & Fortier, 2001; Oakley-Browne, Joyce, Wells, Bushnell, & Hornblow, 1995; Parker, 1982), although other research supports the relation between paternal bonding and depression and anxiety (Alnaes & Torgersen, 1990). Taken together, these findings support the relation between parental bonding and depression and anxiety.

Parental bonding and depression. Research on the relation between parental bonding and depression has sought not only to identify the nature of their relation but also to develop understanding about the development of this relation. Studies of both adults and children have found an association between parental bonding and depression (Avagianou & Zafiropoulou, 2008; Enns et al., 2002b; Martin, Bergen, Roeger, & Allison, 2004; Neale et al., 1994). Although both maternal and paternal care and overprotection have been linked with increased risk of developing depression (Martin et al., 2004), lower levels of maternal care have been most consistently associated with increased risk for developing depression (Enns et al., 2002b; Grotmol et al., 2010; Rey, 1995). Additionally, the combination of parenting characterized as “Affectionless Control,” consisting of low levels of care and high levels of overprotection, has been associated with increased vulnerability to and longer episodes of depression (Betts, Gullone, & Allen, 2009; Handa, Ito, Tsuda, Ohsawa, & Ogawa, 2009; Parker, 1979). Poor parental bonding has also been associated with increased risk of suicidal behaviors in individuals with a prior history of suicidal behavior (Dale, Power, Kane, Stewart, & Murray, 2010).

The strength of the relation between parental bonding and depression may be moderated by other familial influences. For example, in a study of children with depression compared to children with low or high risk for developing depression, parental bonding was a significant predictor of risk for developing depression (Stein et al., 2000). However, when maternal depression was considered, only a trend for bonding characterized by low care and high overprotection was found in the high risk group. These findings suggest that the effects of parental bonding on depression may depend, in part, on parents' mental health. Moreover, it seems likely that parental bonding influences vulnerability to depression, rather than mood symptoms influencing ratings of parental relationships. This influence can be seen in a study that explored the directionality of this relation and found that models that identified poor parental bonding as causing depressive symptoms provided the best fit for data (Neale et al., 1994).

Given the perceived directionality of the relation between parental bonding and depression, research has explored the process by which this vulnerability may develop. Beck's (1967) cognitive theory posited that early life experiences and interactions with parents are crucial to the development of schemas and associated cognitive styles. Interactions with the environment drive the development of specific beliefs about the self, the world, and the future. Poor parental relationships could result in negative schemas in children. With each additional maladaptive interaction, those schemas may be reinforced until a specific pattern of thinking becomes ingrained and automatic. Those schemas associated with negative value judgments are posited to be particularly salient in the development of vulnerability to symptomatology. In keeping with Beck's theory, negative schemas and cognitive styles have been linked to parental bonding.

In one study that assessed schemas in individuals with and without depression, suboptimal parental bonding and increased levels of negative schemas were reported by individuals with depression (Shah & Waller, 2000). More specifically, these negative schemas functioned as mediators between poorer parental bonding and depressive symptoms. Negative schemas about the self have similarly been implicated as mediators between poor parental bonding and risk of engaging in suicidal behaviors (Dale et al., 2010). Another study that explored the relation between automatic thoughts and parental bonding found that low levels of maternal care were associated with higher levels of negative automatic thoughts about the self (Ingram et al., 2001); paternal overprotection was also a significant predictor of such cognitions, suggesting that, although maternal care may be particularly influential in the development of schemas and related cognitions, paternal factors are also important.

More explicit thoughts that result from the activation of schemas have also been studied in relation to parental bonding and vulnerability to depression. Dysfunctional attitudes are defined as stable beliefs about the self, situations, and the future that are maladaptive and assumed to arise from negative schemas (Beck 1972). Research on dysfunctional attitudes has supported a mediating role for these cognitive styles between parental bonding and vulnerability to depression in children. Specifically, a prospective study that assessed parental bonding, dysfunctional attitudes, self-worth, and depressive symptoms in children reported that both dysfunctional attitudes and low self-worth mediated the relation between parenting and depressive symptoms (Liu, 2003). However, although self-worth was a better predictor of depressive symptoms than dysfunctional attitudes, the latter was related to lower levels of perceived parental care and higher levels of perceived parental indifference. Similar findings have also been reported in adults (e.g., Randolph & Dykman, 1998; Whisman & Kwon, 1992).

For example, in a study of undergraduates, Randolph and Dykman (1998) found dysfunctional attitudes mediated the relation between perceived critical and perfectionistic parenting styles and depression-proneness.

Particular support has been found for a key role of maternal parenting behaviors in the development of dysfunctional attitudes toward the self, although paternal bonding has also been linked to dysfunctional attitudes (Andersson & Perris, 2000). Although some research suggests that parental care is most closely linked to depressive symptoms and to dysfunctional attitudes of the parenting dimensions, other studies have also found support for higher levels of overprotection in those vulnerable to depression (see Alloy, Abramson, Smith, Gibb, & Neeren, 2006 for review). Parental bonding may affect not only the development of schemas and dysfunctional attitudes but also the development of coping strategies.

Coping strategies have typically conceptualized as either problem-focused or emotion-focused efforts to manage the effects of stress. Typically problem-focused coping strategies have been viewed as more adaptive, with emotion-focused coping strategies seen as more maladaptive and associated with increased risk for developing depressive symptoms (see Zeidner & Saklofske, 1996 for review; also Garnefski, Kraaij, & Spinhoven, 2001). Attachment theory (Bowlby 1973, 1980) suggests that individuals who have insecure relationships with their parents are more likely to use maladaptive coping strategies when stressed. In line with this suggestion, Kraaij et al. (2003) assessed coping strategies, parental bonding, and depressive symptoms and found that parental bonding moderated level of depressive symptoms only when coping strategies were not considered in the model. These results suggest that coping strategies may serve as mediators between suboptimal parental bonding and coping strategies. A later series of studies by Matheson and colleagues (2005) reported similar findings, with maternal bonding

consistently related to both coping styles and depressive symptoms. Taken together, these findings highlight the importance of early interactions between parents and children on later mental health. They also suggest that parental bonding may influence the development of vulnerability to depression in part by influencing the development of negative schemas, dysfunctional attitudes, and related coping styles.

Parental bonding and anxiety. Although less frequent than depression research, some research has also studied the relation between anxiety and parental bonding. Suboptimal parental bonding (e.g., low care and high overprotection) has been associated with increased levels of anxiety symptoms in adults (Bennet & Sterling, 1998). A large epidemiological study of the relation between parental bonding and prevalence of four anxiety disorders - social phobia, generalized anxiety disorder, specific phobia, and panic disorder - reported that lower levels of care and higher maternal overprotection were associated with the presence of at least one of these anxiety disorders (Heider et al., 2008). Negative correlations between maternal care and trait and state anxiety have been reported, with lower levels of care associated with higher levels of anxiety (Carter, Sbrocco, Lewis, & Friedman, 2001); a similar association with maternal overprotection was also found, consistent with other research (McLeod, Wood, & Weisz, 2007; Wood, McLeod, Sigman, Hwang, & Chu, 2003). In sum, although both parental care and overprotection have been linked to anxiety, only parental overprotection has consistently been associated with anxiety, suggesting that it may play a unique role in conferring vulnerability to developing anxiety (Murray, Creswell, & Cooper, 2009).

Relatively little research has assessed possible mechanisms by which parental bonding may influence vulnerability to anxiety. One study assessed the presence of cognitive errors, metacognition, and thought control strategies in relation to parenting and anxiety (Gallagher &

Cartwright-Hatton, 2008). The authors concluded that cognitive errors resulted from negative schemas, whereas the metacognition and thought control strategies represent attempts to manage thinking. Parenting styles characterized by overprotection, overreaction and low warmth were also associated with increased anxiety symptoms and cognitive errors and metacognition partially mediated this relation. Negative attributional styles have also been found to mediate the relation between parental bonding and social anxiety, such that suboptimal bonding was associated with negative beliefs about the world and increased anxiety symptoms (Schapman, 2003). In sum, there is some evidence to suggest that cognitive styles are the mechanism by which parental bonding influences vulnerability to developing anxiety, although additional research is warranted.

Parental bonding and depression and anxiety. As “affectionless control” has been implicated in both depression and anxiety, some researchers have proposed that parenting behaviors may represent multifinality; that is, the same characteristics or risk factors may result in several different outcomes (Wood et al., 2003). To this point, several studies have sought to examine parenting as it relates to both depression and anxiety. Early reviews suggested that higher levels of rejection and overprotection might be associated with depressive symptoms, whereas other studies found heightened levels of overprotection associated with anxiety symptoms (see Rapee, 1997 for review). Assessing possible cognitive mediators between parental bonding and depressive and anxiety symptoms in a sample of outpatients, McGinn and colleagues (2005) found lower levels of maternal care and higher levels of maternal overprotection reported more depressive and anxious symptoms than those with more optimal parenting. Consistent with prior research on parenting and depressive symptoms (Ingram et al., 2001; Ingram & Ritter, 2000), a relation between paternal bonding and symptomatology was

observed. Similar findings were observed in a study of attachment styles and symptomatology (Lee & Hankin, 2009). Specifically, dysfunctional attitudes and low self-esteem mediated the relation between anxious attachment and prospective increases in anxiety or depressive symptoms. No such relation was found for securely or avoidantly attached individuals. Parental interactions have also been associated with affective symptomatology. A recent study found support for a relation between lower levels of maternal care and increased negative beliefs about the self, negative interactions with others, and fatigue (Meites, Ingram, & Segal, 2012). Similarly, lower levels of parental care were associated with increased levels of cognitive symptoms of anxiety; maternal overprotection was associated with higher levels of reported physical symptoms of anxiety, whereas paternal overprotection was linked with increased negative beliefs about the self (Meites et al., 2012). Taken together, these findings suggest that parental bonding, particularly maternal bonding, may influence the development of symptomatology through the development of dysfunctional attitudes and negative cognitive styles.

Other Aspects of Perceived Parenting and Depression and Anxiety

Other aspects of parenting have been explored with regard to depressive and anxious symptoms, including expressed emotion and perfectionism. Expressed emotion (EE) is commonly defined as the degree to which criticism and emotional acceptance is expressed to and negative attributions are made about, an individual. High levels of EE have been associated with increased risk of relapse in depression (Hooley, Orley, & Teasdale, 1986; Hooley & Teasdale, 1989) and increased levels of depressive symptoms in children (Tompson et al., 2010).

To illustrate, a prospective study reported by Lindelow (1999) of children and maternal EE found that higher levels of maternal EE were associated with increased risk of developing

depressive symptoms as an adult. Additional research has found that adolescents' perceptions of parental criticism are associated with depressive symptoms, such that higher levels of perceived criticism were associated with increased symptomatology (Bolton, Barrowclough, & Calam, 2009). Moreover, parental criticism and perfectionism have been associated with dysfunctional attitudes and with depressive symptoms (Randolph & Dykman, 1998); specifically, dysfunctional attitudes mediated the relation between parenting behaviors and symptoms, with higher levels of criticism and perfectionism associated with increased depressive symptoms. Expressed emotion has also been associated with obsessive-compulsive disorder and anxiety symptoms (see Wood et al., 2003 for review). In sum, higher levels of criticism and EE have also been linked with increased depressive and anxious symptomatology.

Summary and Rationale for Present Study

Although research has consistently linked parental behaviors with depression and anxiety disorders, the exact nature of these relations remains unclear. Some research suggests that cognitive factors may serve as mediators of these relations (Gallagher & Cartwright-Hatton, 2008; Lee & Hankin, 2009; McGinn et al., 2005; Randolph & Dykman, 1998; Whisman & Kwon, 1992), although few studies have directly assessed potential differences in parental bonding between depression and anxiety. None have assessed possible shared and unique factors of parental bonding and cognitive styles on affective symptomatology.

The tripartite model (Clark & Watson, 1991) posits that depression and anxiety disorders share a general distress factor; accordingly these disorders likely share some risk factors. In line with this theory, research on parental bonding has identified common bonding aspects between the disorders (e.g., low maternal care). However, research has primarily assessed the relation between shared bonding factors and overall symptomatology rather than specific types of

symptoms (e.g., cognitive, somatic). Inasmuch as the cognitive and attachment theories assume that cognitive biases influence the development of symptomatology, including somatic symptoms, aspects of parental bonding may be specifically linked to cognitive symptoms of depression and anxiety. Thus research on the unique and shared contributions of parental bonding to aspects of depression and anxiety is needed, particularly in light of the mediating role of cognitive styles.

The Present Study

The high degree of comorbidity between depression and anxiety disorders can make it difficult to disentangle unique features of both disorders (Ingram 1990). Accordingly, theories have attempted to explain possible shared factors in the development of affective symptomatology (i.e., Beck 1972; Bowlby 1973; Bowlby 1980); parenting has been one such factor identified, although research on the specific contribution of parenting to the development of affective symptomatology has been incomplete. The present study sought to better differentiate between symptom types. Specifically this study sought to gain a better understanding of the unique and shared aspects of parenting that may contribute to the development of specific components of affective symptomatology. As cognition has been posited to play a key role in the development of depression (i.e., Alloy et al., 2006; Beck 1972), the present research attempted to explore whether certain types of cognitive beliefs, i.e., dysfunctional attitudes, attributions about anxiety, might mediate the relation between parenting and symptomatology.

In order to answer these questions, this study explored self-reported beliefs about parenting, cognition, and affective symptomatology in a nonclinical sample of college undergraduates with a range of affective symptomatology; inclusion of participants with a broad

range of symptomatology permitted increased differentiation between symptom types.

Participants who endorsed at least a minimum level of symptoms completed a series of measures assessing perceived parenting behaviors, cognitive beliefs about anxiety, dysfunctional attitudes, and symptom inventories for anxiety and depression. In order to control for possible differences in parenting or symptomatology that can occur with a family or personal history of affective disorders, participants were asked to report this information for use as covariates in this study.

Given results from factor analyses of the Beck Depression Inventory-II (Storch, Roberti, & Roth, 2004) and the Beck Anxiety Inventory (BAI; Osman, Copper, Barrios, Osman, & Wade, 1997), factoring of measures of affective symptomatology was predicted to yield two factors for depressive symptoms and four factors for anxiety symptoms. Factors of affective symptomatology were expected to be positively correlated with each other; similarly, maternal and paternal care were expected to be positively correlated with each other and negatively correlated with maternal and paternal overprotection and with intrusiveness. Cognitive beliefs about anxiety and dysfunctional attitudes were expected to act as full mediators between parenting and symptom factors. Specifically, it was expected that lower levels of parental care would be associated with higher levels of maladaptive cognitions and increased affective symptomatology. Higher levels of parental overprotection and intrusiveness were similarly expected to be associated with increased levels of negative cognitive styles and, accordingly, increased levels of affective symptomatology. Cognitive styles believed to be specific for depression (e.g., perfectionism) were predicted to be related only to depressive symptoms, with cognitive styles related to anxiety (e.g., anxiety sensitivity) specifically predicting anxiety symptoms. Stronger relations were expected to exist between cognitive styles and cognitive symptoms of anxiety and depression. Given the inconsistent reports of the relation between

paternal bonding and affective symptomatology (e.g., Matheson et al., 2005), maternal bonding was predicted to be a stronger predictor than paternal bonding.

Method

Participants

Participants were undergraduates recruited from introductory psychology courses at the University of Kansas. Participants were selected on the basis of their responses to questions of anxiety and depressive symptoms on a prescreening measure. To ensure a sufficiently wide range of affective symptomatology in the study, participants whose data were retained for this study were those who endorsed a minimum level of depressive and anxious symptoms; specifically data was retained for those participants who endorsed at least a “3” on both the Beck Depression Inventory-II inventory (Beck, Steer, & Ball, 1996) and the Beck Anxiety Inventory (Beck, Epstein, Brown, & Steer, 1988). Of the 399 who met criteria at the time of the prescreening measure and participated in the study, 308 (52.9% female) continued to meet criteria after completing the study. Of those participants, 30.2% reported a family history of depression, 34.3% reported a family history of anxiety, and 36.4% reported a personal history of depression. Family history of depression was significantly related to personal history of depression ($r = 0.15$, $p < 0.05$) but not to family history of anxiety ($r = 0.09$, $p > 0.10$). Participants primarily identified themselves as Caucasian (78.9%), with the remainder identifying as Asian (6.8%), Hispanic (5.8%), Other (5%), African-American (3%), and Native-American (0.5%). All further analyses were conducted with data from this sample; descriptive data are presented in Table 1.

Measures

Beck Depression Inventory-II. Designed to assess the presence and severity of both cognitive and somatic depressive symptoms over the previous two weeks, the Beck Depression

Inventory-II (BDI) is a 21-item self-report inventory (Beck, Steer, & Ball, 1996; see Appendix A). Higher scores indicate higher levels of symptomatology. With acceptable test-retest reliability, the BDI was used in the present study as both a measure of current depressive symptoms and as part of the prescreening measure to determine participant eligibility. To test the relations between parenting, cognitive styles, and specific aspects of depression, items from the BDI were grouped together into specific factors (e.g., cognitive symptoms, somatic symptoms).

Beck Anxiety Inventory. With high internal consistency and acceptable reliability, the Beck Anxiety Inventory (BAI) is a 21-item inventory of physical and cognitive symptoms of anxiety (Beck, Epstein, Brown, & Steer, 1988; Beck & Steer, 1990; see Appendix B). In the present study, it was used to measure current symptoms of anxiety, with items grouped into aspects of anxiety (e.g., general fear, somatic symptoms) to permit testing of relations between specific aspects of anxiety, cognitive styles, and parenting. Items from the BAI were also used as part of the prescreening measure to determine participant eligibility for the study.

Parental Bonding Instrument. The Parental Bonding Instrument (PBI) is a retrospective self-report measure that assesses parenting behaviors through age 16 (Parker, Tupling, & Brown, 1979; see Appendix C). The scale assesses two general constructs of parenting: parental care (12 items) and overprotection (13 items). Adequate reliability, validity, (Parker 1989) and temporal stability (Wilhelm, Niven, Parker, & Hadzi-Pavlovic, 2005) have been found for the PBI. The PBI was used in this study as a measure of parental bonding, specifically perceived parental warmth and overprotection. These factors of parental bonding were used as predictors of both cognitive styles and affective symptomatology.

Level of Expressed Emotion. A 60-item self-report measure of expressed emotion, the Level of Expressed Emotion (LEE) is designed to measure four factors: perceived emotional

responsiveness, perceived attitude toward illness, perceived intrusiveness, and perceived tolerance (Cole & Kazarian, 1988; see Appendix D). However, other studies have reported a three factor structure, including lack of emotional support, intrusiveness/control, and irritability (e.g., Gerlsma, van der Lubbe, & van Nieuwenhuizen, 1992; Nelis, Rae, & Liddell, 2011; Startup 1999) and have suggested that a revised version be used instead. Individuals are asked to rate their agreement of statements on a four point Likert scale; responses are summed to provide an overall measure of expressed emotion. Adequate internal consistency, construct validity, and reliability have been found for the LEE (Cole & Kazarian, 1988; Gerlsma et al., 1992). Additionally, research has suggested that the LEE predicts improvement in depressive symptoms (Gerlsma & Hale, 1997). In the present study, the LEE was used to complement the PBI and measure perceived parental intrusiveness. As the revised versions are comprised primarily of items from the original measure and as this author was unable to obtain a revised version prior to the start of the study, the full 60-item version was administered.

Dysfunctional Attitudes Scale. The Dysfunctional Attitudes Scale DAS is a 40 item self-report inventory of explicit maladaptive attitudes (Weissman 1979; see Appendix E). Higher scores on the DAS indicate increased levels of dysfunctional attitudes and have been associated with increased levels of depressive symptoms. Factor analyses of the DAS have reported a two factor structure, composed of performance evaluation (perfectionism) and evaluation by others (Cane, Olinger, Gotlib, & Kuiper, 1986). As the present study was interested in assessing the potential mediating role of cognitive styles between perceived parenting and affective symptomatology, the DAS was used as a measure of depressogenic cognitive styles. In the present study, higher scores on the DAS were indicative of more adaptive cognitive styles (e.g., lower levels of perfectionism).

Anxiety Sensitivity Index. One way schemas or attitudes related to anxiety have been assessed is by measuring individuals' level of anxiety sensitivity. Consisting of the level of beliefs individuals hold about the potential harmfulness of symptoms commonly associated with anxiety (Reiss & McNally, 1985), anxiety sensitivity is assumed to be a stable trait that is activated by stressors. One commonly used measure of this construct is the Anxiety Sensitivity Index (ASI) is a 16-item self-report measure (Peterson & Reiss, 1987; see Appendix F). Good internal consistency and construct validity have been reported for this measure (Peterson & Heilbrunner, 1987). Factor analyses have supported a two-factor structure for the ASI, with one higher order factor of general anxiety sensitivity and two lower-order factors: fear of physiological symptoms and fear of losing mental control (Schmidt & Joiner, 2002). Although intended to measure cognitive vulnerability to anxiety, the ASI has also been linked to depressive symptoms, a relation not well understood (Reardon & Williams, 2007). In the present study, the ASI was used to measure anxiety-related cognitions and shared factors between affective symptoms. Factors from the ASI were tested as mediators between perceived parenting and affective symptoms.

Visual Analogue Scale. Visual Analogue Scales (VAS; see Appendix G) were administered at the start and end of the assessment. Each VAS consisted of a 200 mm line anchored by "sad" and "not-sad" on the ends. Participants were instructed to mark their current mood state on this quick measure. Scoring this measure involves calculating the distance participants mark from the "not-sad" anchor and translating that into a percentage. The VAS has been successfully used in other studies to assess changes in participants' mood as a function of the study (e.g., Gemar et al., 2001). In the present study, the VAS was used to evaluate any effect of the questionnaires on participants' mood.

Family History Screen. To assess family history of depression and anxiety, a self-report version of the Family History Screen (FHS; see Appendix H) was used. Designed as a 31-question interview, the FHS includes items about all DSM-IV-TR Axis I disorders, except for Adjustment, Dissociative, and Somatoform Disorders. Additional questions assess Attention Deficit/Hyperactivity Disorder, Conduct Disorder, suicide attempts, and general mental health. Participants are asked to provide information about their immediate biological family, including siblings and children. Items are rated on a three point scale, with “0” indicating the absence of the disorder, “1” suggesting its presence, and “9” indicating a lack of information. The FHS has shown acceptable specificity and reliability of diagnosis (Weissman et al., 2000). In the present study, questions were slightly reworded to allow participants to complete this measure as part of the questionnaire packet. Questions about Conduct Disorder, Attention Deficit/Hyperactivity Disorder, and Attachment Disorder were not included in this study. Participants’ family history of anxiety was coded as a “0” if participants did not endorse any symptoms of anxiety for either parent and as a “1” if they indicated that at least one parent experienced a significant symptom of anxiety. A similar coding system was used for family history of depression.

Self-Report Structured Clinical Interview for the DSM-IV-TR Mood Module.

Developed from the Structured Clinical Interview of the DSM-IV-TR Axis I Disorders – Non-patient Edition (SCID; First, Spitzer, Gibbon, & Williams, 2002) by David Luxton (see Appendix I), the Self-Report SCID Mood Module is composed of the past depressive episode and of the manic episode modules of the SCID, reworded slightly for participants to complete independently. Initial use of the measure suggested that it provided equivalent information and accuracy to the interview version of the SCID (Luxton, 2007). In the present study, it was used to assess participants’ history of depression. Participants who endorsed experiencing at least five

symptoms of depression for at least two week, including one cardinal symptom, were assumed to have experienced a depressive episode and coded as a “1.” Participants without that history were coded as a “0.”

Procedure

Participants were recruited from an introductory psychology study pool who endorsed at least minimal depressive (>1) and anxiety (>1) symptoms on questions on a prescreening measure. Inclusion criteria for recruitment were less exclusive than study criteria to reflect the abbreviated nature of screening questionnaires and to facilitate recruitment of an adequate sample. After obtaining informed consent, participants were asked to complete all questionnaires in groups of 10-25 in a mass testing procedure. Questionnaire order was randomized and counterbalanced, although a brief mood questionnaire was always the first and last questionnaire in the packet. Participants completed all measures anonymously. For their participation, participants received credits for partial completion of an introductory psychology course requirement. Data from participants who endorsed at least a “3” on both the BDI and the BAI during the study session were retained for final analyses.

Results

Analytic Strategy

Using factor structures identified in prior research, confirmatory factor analyses (CFA) were performed on each measure to verify the appropriate factor structure for each construct. Items with standardized loadings of less than 0.4 were dropped from the scale, and CFA's repeated to evaluate fit. If model fit was not significantly improved by dropping items with poor loadings, those items were retained for further analyses. Parceling was used for constructs identified with more than five items to increase measure reliability and simplify model

specifications. Loadings from each CFA were used to create three parcels for each construct using item-to-construct relations (Little, Cunningham, Shahar, & Widaman, 2002); these parcels were then used to identify constructs in the final model. Structural equation modeling, a flexible statistical modeling technique that can be used to test relations between observed and latent constructs (Brown, 2006), was used to evaluate the relations between aspects of parenting, cognitive styles, and affective symptomatology. Variances of constructs were fixed to 1.0 using the fixed factor identification method to provide a common scale across constructs and indicators. All analyses were conducted using PSAW version 20 and Mplus version 6.12.

Missing Data

In the present sample, 0.0098% of data were missing. Examination of the data did not reveal a pattern to the missingness; accordingly the data were assumed to be missing at random. As the benefits of multiple imputation are primarily seen with samples with larger amounts of missingness and that there is some evidence that full information maximum likelihood (FIML) has an advantage over multiple imputation in terms of power for finding small effect sizes (Graham, Olchowski, & Gilreath, 2007), FIML was used in the present study to account for missing data.

Effect of Mood on Symptoms

Participants endorsed more symptoms of sadness at the end of the study ($M = 25.58$, $SE = 1.25$) than at the beginning of the study ($M = 15.43$, $SE = 17.27$). Surprisingly this was not a significant difference, $t(293) = 0.59$, $p = .56$, likely as a result of considerable interpersonal variability. In sum, these findings suggest that participants' mood was not significantly affected as a result of completing these questionnaires, $t(293) = 0.59$, $p = .56$.

Factors of Affective Symptomatology

Beck Depression Inventory-II. Previous research has indicated that a two factor model is best supported by the BDI-II (e.g., Vanheule, Desmet, Groenvynck, Rosseel, & Fontaine, 2008). In keeping with those findings, a two factor model, consisting of Cognitive Symptoms and Somatic Symptoms, was well supported by the present data ($\chi^2 (103) = 220.83, p < .01$, RMSEA = .06, CFI = .91, TLI = 0.90, SRMR = .05; see Table 2). Two items on the Somatic subscale had loadings of less than .40. Removing these items did not significantly improve model fit; accordingly they were retained in the final model. Higher levels of cognitive symptoms were associated with increased levels of somatic symptoms, $r = 0.77, p < .01$.

Beck Anxiety Inventory. Consistent with hypotheses and previous research (e.g., Meites et al., 2012; Osman et al., 1997), a four factor model was supported ($\chi^2 (182) = 417.90, p < .01$, RMSEA = .07, CFI = .90, TLI = .89, SRMR = .05; see Table 3). Those factors were identified as General Cognitive Symptoms of Fear, Physical Symptoms of Fear, Lack of Steadiness, and Fear of Dying. With the exception of the latter, all scales demonstrated good internal consistency (see Table 3). All factors were positively correlated with each other (see Table 10). As well, higher levels of general fear were associated with higher levels of cognitive symptoms of depression; similarly, higher levels of physical fear, lack of steadiness, and fear of dying were associated with increased somatic symptoms of depression (see Table 10).

Factors of Parenting

Parental Bonding Instrument. Designed to assess parental care and overprotection (Parker et al., 1979), the PBI has received some support as a two factor inventory (e.g., Kazarian et al., 1987). The present study provided some support for this model, although two of the fit indices were suggestive of less than adequate model fit ($\chi^2 (1167) = 3192.945, p < .01$, RMSEA = .08, CFI = .77, TLI = .76, SRMR = .09; see Table 6). Four items had loadings of less than

0.40. Dropping these items from the scale and repeating the CFA failed to improve the model. However, all four subscales demonstrated good internal consistency (see Table 1). Given that two of the fit indices were supportive of acceptable model fit and that there was good internal consistency, this structure was maintained for further analyses. Consistent with hypotheses, higher levels of maternal care were significantly associated with higher levels of paternal care and with lower levels of maternal and paternal overprotection (see Table 9 for correlations between all parenting constructs). Similarly, higher levels of paternal care were associated with lower levels of maternal and paternal overprotection, whereas higher levels of maternal overprotection were associated with higher levels of paternal overprotection.

Level of Expressed Emotion. Consistent with other research (e.g., Gerlsma et al., 1992), confirmatory factor analysis of the LEE failed to find adequate support across all fit indices for the original four factor structure ($\chi^2 (1706) = 4059.43, p < .01$; RMSEA = .07, CFI = .69, TLI = .68, SRMR = .10). In order to obtain a meaningful measure of intrusiveness, exploratory factor analyses with oblimin rotation were conducted with three and four factors specified for extraction. A four factor solution yielded a better fit than the three factor model, $\Delta\chi^2 (57) = 244.97, p < .05$. Visual inspection of the loadings identified one factor as intrusiveness comprised of eight items from the original intrusiveness subscale.

A CFA conducted on this revised scale yielded acceptable model fit for one fit statistic (SRMR) but only borderline acceptable fit for the others ($\chi^2 (20) = 93.166, p < .01$, RMSEA = .11, CFI = .88, TLI = .83, SRMR = .06; see Table 7). Moderate internal consistency was observed for these items (see Table 1). Two items had standardized loadings of less than 0.40; as removal of these items decreased model fit, these items were retained in the model. Since the factor structure of the LEE has varied somewhat across studies, even in the same population,

(e.g., Hale, Raaijmakers, Gerlsma, & Meeus, 2007; Nelis, et al., 2011) and as the present structure was moderately supported by the data, this factor structure was used to indicate parental intrusiveness. As hypothesized, higher levels of parental intrusiveness were associated with higher levels of maternal and paternal overprotection and with lower levels of maternal and paternal care (see Table 9).

Cognitive Factors

Dysfunctional Attitudes Scale. Previous research has supported a two factor structure for the DAS in students and adolescents (Cane et al., 1986, Rogers et al., 2009). These factors have been identified as the need for approval from others and as either performance evaluation or perfectionism. Confirmatory factor analysis of this two factor structure yielded a model with good model fit on two statistics and borderline fit on the others ($\chi^2 (208) = 528.15, p < .01$, RMSEA = .07, CFI = .87, TLI = .86, SRMR = .06; see Table 4). As removal of the two items with standardized loadings of less than .40 worsened model fit, they were retained in the present model. The two constructs, identified as Need for Approval and Perfectionism, were significantly correlated, such that higher levels of need for approval from others were associated with higher levels of perfectionism, $r = .554, p < .01$.

Anxiety Sensitivity Index. In the process of implementing the study, a typographic error was made, such that item 1 on the questionnaire was duplicated as item 5. Since these items were identical and as prior factor analysis on this measure failed to support either item as significant indicators of this construct (e.g., Schmidt & Joiner, 2002), these items were dropped from all analyses. Confirmatory factor analysis of the ASI yielded adequate support for a two factor model, Fear of Mental Symptoms and Fear of Physical Symptoms ($\chi^2 (32) = 104.40, p < .01$, RMSEA = .09, CFI = .93, TLI = .90, SRMR = .05; see Table 5). This is consistent with prior

research (e.g., Schmidt & Joiner, 2002). Borderline acceptable internal consistency was observed for these factors. Higher levels of anxiety about mental symptoms were associated with increased level of fears about physical symptoms, $r = .88, p < .01$.

Model of Parenting, Cognitive Styles, and Affective Symptomatology

Parcels were created from the factor loadings for each construct and used to identify each construct. These constructs were entered into a structural equation model; constructs assumed to be related (e.g., aspects of parental bonding, cognitive styles, affective symptomatology) were allowed to correlate with each other. Inspection of the loadings of the indicators onto the constructs revealed that all indicators had loadings of greater than .40; loadings of parcels and indicators onto their respective constructs are presented in Table 11, along with their intercepts and residual variances. A full mediation model, whereby the four cognitive style factors completely mediated the relations between parenting factors and affective symptomatology, was compared to a partial mediation model, in which all parenting factors were allowed to predict all aspects of affective symptomatology (see Table 8). Fit statistics indicated that both models fit the data well. With the exception of one fit statistic ($\Delta\chi^2(30) = 46.26, p < .05$), allowing indirect paths between parenting and affective symptomatology did not significantly improve model fit (see Table 8). Accordingly, the full mediation model was used for all further analyses.

Family history of depression was then added as a covariate, such that all constructs were regressed onto it. No appreciable change in model fit was observed. Similarly family history of anxiety was added to the model; again no significant change in model fit was observed. Finally, participants' personal history of depression was added to the model. All fit indices continued to support good model fit (see Table 8). Examination of the modification indices did not reveal additional paths whose estimation would improve model fit and be consistent with established

relationships between variables. Since good model fit was achieved, interpretation was conducted on this last model. For ease of interpretation, only significant paths are presented.

Controlling for the effect of covariates, maternal care was a significant predictor of perfectionism ($\beta = .17, p < .05$) and concerns about the physical symptoms of anxiety ($\beta = .21, p < .05$), such that higher levels of maternal care were associated with more adaptive attitudes towards perfectionism but increased concerns about the physical symptoms of anxiety. Similarly, higher levels of paternal care predicted more adaptive attitudes towards perfectionism ($\beta = .14, p < .05$). Consistent with hypotheses, higher levels of maternal overprotection significantly predicted increased levels of concerns about the mental symptoms of anxiety ($\beta = .26, p < .05$) and higher levels of concerns about the physical symptoms of anxiety ($\beta = .45, p < .01$). Paternal overprotection was not a significant predictor of any cognitive style. Surprisingly, increased levels of parental intrusiveness were associated with lower levels of concerns about physical anxiety symptoms ($\beta = -.19, p < .05$).

Consistent with hypotheses, lower levels of adaptive attitudes towards perfectionism (i.e., higher levels of perfectionism) predicted higher levels of cognitive symptoms of depression ($\beta = -.32, p < .01$) and higher levels of somatic symptoms of depression ($\beta = -.18, p < .05$). Interestingly, higher levels of need for approval from others were not associated with any aspect of depressive symptomatology; instead, higher levels of need for approval were associated with increased levels of general cognitive symptoms of fear ($\beta = -0.16, p < .05$). Reported concerns about the cognitive symptoms of anxiety were nonspecific predictors of affective symptomatology. Heightened levels of this anxiety predicted increased cognitive symptoms of depression ($\beta = .73, p < .01$), increased somatic symptoms of depression ($\beta = .83, p < .01$), increased general fear ($\beta = .63, p < .01$), and decreased steadiness ($\beta = 0.45, p < .01$). Concern

about the physical symptoms of anxiety was a similarly nonspecific predictor. Decreased concern about the implication of physical symptoms of anxiety predicted higher levels of cognitive symptoms of depression ($\beta = -.47, p < .05$) and increased somatic depressive symptoms ($\beta = -.43, p < .05$); heightened concern about the physical symptoms of anxiety was associated with increased fear of dying ($\beta = .39, p < .05$).

Effect of Covariates

Differences between the covariates (family history of depression, family history of anxiety, and personal history of depression) were evaluated on the mean estimate of each latent construct (see Table 12 for γ estimates). Individuals who reported a family history of depression reported higher levels of need for approval from others than those who did not report such a history ($p < .05$). Those individuals who reported a family history of anxiety also reported higher levels of physical symptoms of anxiety ($p < .05$). Participants who reported experiencing at least one depressive episode reported higher levels of general cognitive symptoms of anxiety ($p < .01$), lack of steadiness ($p < .01$), cognitive symptoms of depression ($p < .01$), somatic symptoms of depression ($p < .01$), fears about the mental symptoms of anxiety ($p < .01$), and concerns about the physical symptoms of anxiety ($p < .01$). However, those who reported a personal history of depression also reported higher levels of perfectionism ($p < .01$), greater need for approval from others ($p < 0.01$), lower levels of maternal care ($p < .01$), and lower levels of paternal care ($p < .01$).

Discussion

The present study sought to investigate the relations between perceived parental bonding, parental intrusiveness, cognitive styles, and aspects of affective symptomatology in a sample of college undergraduates with a range of affective symptomatology. Consistent with previous

research and with hypotheses (e.g., Vanheule et al., 2008; Meites et al., 2012), the data best supported a two factor structure of current depressive symptoms and a four factor structure for current anxiety symptoms. Depressive symptoms were best characterized into cognitive/affective symptoms and somatic symptoms. Although these factors were significantly correlated (see Table 10), the support for a two factor model substantiates the idea that assessment of both cognitive and physical symptoms of depression is necessary to understand possible developmental factors of depression. Similarly, anxiety was best defined by four factors representing general symptoms of anxiety, physical symptoms of anxiety, lack of steadiness, and fears about symptoms related to dying. Although a unified factor structure for the BDI and BAI has been inconsistently found in the literature, the present findings provide additional support for the specified factor structures for the BDI and BAI. Additionally these findings highlight the importance of considering each aspect of affective symptomatology separately given the multidimensionality of these disorders. Failure to do so may not only result in decreased ability to detect significant findings but also result in difficulty identifying the mechanisms of action of specific developmental factors.

The Mediation Model

Both full and partial mediation models were supported by the present data. However there was no statistical advantage to retaining the additional paths between parental bonding and affective symptomatology. This finding supported the present hypotheses and is consistent with theory (Beck 1967), which posits that negative cognitive schemas emerge from negative experiences early in life; such experiences can include maladaptive interactions with parents. The present model is also consistent with prior research that has linked perceived parental bonding and depressive symptoms to the presence of maladaptive cognitive schemas (i.e., Shah

& Waller, 2000). Research has also implicated negative cognitive styles, including coping strategies, in the relationship between maladaptive parenting behaviors and the development of depressive symptoms in young adulthood (Hankin, 2005; Kraaij et al., 2003). In sum, it seems likely that one primary mechanism by which affective symptomatology develops in the face of negative parenting behaviors is through the development of negative cognitive styles. In this model, participants' cognitive attitudes may be shaped by early interactions with their parents or parental figures. Those cognitive attitudes, in turn, may then underlie the presence of symptoms of anxiety and depression.

In the present study, the data suggest that the relationship between perceived parental bonding and parental intrusiveness and affective symptomatology can be conceptualized as either a direct or an indirect one. Although the principle of parsimony was employed, and a full mediation model was used for all further analyses, consideration of the partial mediation model is warranted. Specifically the present model specifies only one of the possible pathways by which perceived parenting may influence the development of affective symptomatology. Other aspects of parenting or cognition may also be involved in the development of symptomatology, such as attachment style and response style of the child to the parent. Genetic factors may also influence the development of cognitive styles and affective symptomatology; for example, a serotonin transporter promoter polymorphism has been linked to both negative cognitive styles and to affective symptomatology in the presence of stressful life events (e.g., Beevers, Scott, McGeary, & McGeary, 2009; Gibb, Urhlass, Grassia, Benas, & McGeary, 2009).

Notably, the addition of indirect pathways to the present model did not significantly change the relationships between the constructs of interest. Although there is unexplained variance that can be explained by the addition of pathways between aspects of perceived

parenting and affective symptomatology, it was not statistically significant. This suggests that this variance may be better accounted for by other factors, which were not included in the model. While exploring the unique contributions of each of these factors is beyond the scope of this study, further research should continue to explore the different pathways by which early life experiences affect the development of vulnerability to affective disorders.

Relations Between Parental Bonding, Cognitive Styles, and Symptomatology

Parenting and cognitive styles: Dysfunctional attitudes. Consistent with hypotheses, higher levels of parental care (both maternal and paternal) were associated with decreased levels of parental overprotection and intrusiveness. Similarly higher levels of reported parental intrusiveness were associated with increased maternal and paternal overprotection. As predicted and consistent with prior research (i.e., Ingram et al., 2001), higher levels of maternal care were associated with lower levels of perfectionistic attitudes. Interestingly, particularly given research implicating maternal parenting behaviors as particularly important in the development of dysfunctional attitudes (Andersson & Perris, 2000), higher levels of paternal care were also associated with lower levels of perfectionism. This suggests that the level of care from both parents is important in the development of attitudes about behaviors. One possible explanation for this divergent finding is that few studies have directly assessed the relation between paternal parenting and cognitive styles; those that have typically employed smaller sample sizes than the present study and may not have been able to detect smaller effect sizes. Alternatively since much of the original work on parental bonding was completed, paternal involvement in childrearing has significantly increased. On average, fathers are spending more time with their children now than they did in the 1970's (Hall 2005; Perone, Wright, & Jackson 2009). With the increase in women in the workforce and increased time fathers spend with their children, parental

responsibility may have become more equally divided. Accordingly, paternal interactions with children may have more impact on the development of cognitive biases because of increased frequency of contact.

None of the other reported parenting styles significantly predicted levels of perfectionism. This is surprising because parental overprotection has previously been linked to increased vulnerability to depression (i.e., Alloy et al., 2006) and to negative automatic thoughts about the self (Ingram et al., 2001). Moreover, harsh parenting, identified as the combination of low care, overprotection, and criticalness has also been linked to increased levels of perfectionistic attitudes (Enns et al., 2002a). The present study explored aspects of parenting separately, whereas other studies have looked at combined parenting behaviors. It is possible that with higher levels of parental overprotection, individuals experience less agency and thus are less likely to develop perfectionistic tendencies. As well, it is possible that parental overprotection and intrusiveness do predict some variance in degree of perfectionistic attitudes but that this variance is more aptly explained by parental care. Perfectionistic attitudes may also not be particularly influenced by parental intrusiveness and overprotection; instead other self-related attitudes, such as perceived agency, may develop in part as a result from these parenting styles. Future studies should continue to explore this relationship to better understand how overprotection and care may interact to predict specific negative attitudes. In sum, these findings suggest that parental care from both parents is particularly important in the development of perfectionistic attitudes and provides support for assessing both parents' level of care.

Reported need for approval from others was not significantly predicted by any of the parenting styles. This is surprising as lower levels of parental care might be expected to elicit a greater desire for interactions with others. In contrast, parental intrusiveness and overprotection

might decrease the desire for interactions with others. Previous research, which identified a relation between parenting and dysfunctional attitudes, did not separate the latter into separate factors (Randolph & Dykman, 1998). As such, it is possible that the reported relationship between dysfunctional attitudes and parenting behaviors may be primarily driven by perfectionism. Additionally, reported need for approval from others may be influenced by other parenting behaviors that are not reflected in the PBI. Alternatively participants may have viewed aspects of parenting through the lens of their cognitive styles and rated aspects of parenting accordingly; those with higher levels of need for approval may have evaluated their parents' interactions as more positive than their peers, which may have resulted in the null finding. Future studies should consider the role of demand characteristics in evaluating parenting relationships and the need for approval from others. In sum, although need for approval may play an important role in the development of affective symptomatology, no significant relationships between need for approval and parenting styles emerged in this study.

Parenting and cognitive styles: Anxiety sensitivity. Fears about the cognitive symptoms of anxiety were associated with higher levels of maternal overprotection only; no other aspects of perceived parenting significantly predicted these concerns. These findings partially support the present hypotheses, although it was expected that parental care and intrusiveness would also be associated with increased levels of fears about the cognitive symptoms of anxiety. Although some research has linked lower levels of maternal care with increased anxiety (i.e., Carter et al., 2001), other studies have found such an association only for maternal overprotection (McLeod et al., 2007; Wood et al., 2003). The present findings provide additional support for the posited unique role of maternal overprotection in the development of anxiety (Murray et al., 2009).

Higher levels of overprotection may confer the idea that the world is an unsafe place and that the individual is unable to cope with challenges. Attributions about the meaning of worries and fears may be particularly relevant for those individuals, who may believe that they cannot manage those worries. Paternal overprotection was also expected to be associated with increased levels of negative attributions about the cognitive symptoms of anxiety. The lack of a relationship may reflect the unique contribution of maternal parenting; it may also relate to the distribution of time that parents spend monitoring or disciplining children. Primary caregivers who spend the majority of time with the child may be expected to have greater influence on the child's development. If mothers continue to be the primary caregivers and responsible for much of the oversight of behaviors, then maternal overprotection is likely to have a larger influence than paternal overprotection.

Related to overprotection, parental intrusiveness was not significantly associated with fears about the cognitive symptoms of anxiety. Similar to overprotection, parental intrusiveness involves parental overmonitoring of children's behaviors. It is possible that intrusiveness results in similar outcomes as overprotection. As such, the addition of intrusiveness to the model would not explain additional variance. As well, intrusiveness could be conceptualized as lacking the cognitive implications of overprotection; accordingly parental intrusiveness may not lead to the development of concerns about the ability to manage symptoms. Taken together, these findings may support a unique role for maternal overprotection in the development of fears about the cognitive symptoms of anxiety.

Similarly heightened levels of maternal overprotection were associated with increased levels of negative attributions about the physical symptoms of anxiety. In contrast, parental intrusiveness was associated with fewer concerns about the physical symptoms of anxiety. These

findings provide further support for the unique role of maternal overprotection in the development of anxiety sensitivity. Additionally they provide support for a difference between overprotection and intrusiveness with regard to their cognitive implications. Although overprotection may convey that the child is incapable of managing a situation, intrusiveness may imply that the child need not monitor a situation as the adult will do so. As such, parental intrusiveness could lead to decreased concern about the physical symptoms of anxiety.

Surprisingly higher levels of maternal care were associated with increased concerns about the physical symptoms of anxiety. This suggests that parents who are particularly involved with children may be overly attentive to physical symptoms associated with anxiety. Increased attention to these symptoms may reinforce the idea that there is something about which to be concerned and result in heightened fears about the physical aspects of anxiety. With these heightened fears may come increased attention to physical symptoms of anxiety; in turn, hypervigilance for such symptoms may result in increased detection of symptoms. Should children report symptoms to overly protective parents, they may receive reinforcement of their negative schemas about anxiety.

Taken together, the present findings are consistent with prior research investigating the relations between perceived parenting and cognitive styles. Additionally, the present findings provide more support for the role of parental care in perfectionistic attitudes, as well as for the unique relationship between maternal overprotection and anxiety sensitivity. Although paternal care may play a significant role in the presence of perfectionistic attitudes, other aspects of paternal parenting were not significantly related to the presence of specific cognitive styles. With the disparate pattern of relationships between perceived parenting and cognitive styles related to depressive and anxious symptoms, the assumption of multifinality is not particularly supported.

Exploration of the relations between cognitive styles and affective symptoms is warranted to further understand the extent to which multifinality may be involved in the development of affective symptomatology.

Cognitive styles and affective symptomatology: Depressive symptoms. Participants who endorsed higher levels of depressive symptoms also reported increased levels of perfectionistic attitudes. Both cognitive and somatic symptoms were predicted by increased levels of perfectionistic attitudes; however neither were significantly related to need for approval from others. This is interesting, as some prior research has implicated dysfunctional attitudes as mediators between depression-proneness and parenting (i.e., Randolph & Dykman, 1998), although such a link between dysfunctional attitudes and negative mood may be particularly mood-state dependent (Miranda, Gross, Persons, & Hahn, 1998). Together the present findings provide support for a unique relationship between perfectionistic attitudes and depressive symptoms.

Although in contrast to hypotheses, which predicted that both perfectionistic attitudes and need for approval would be associated with depressive symptoms, the present findings are consistent with those of Blatt and colleagues (1995), who found that only perfectionism was significantly associated with poorer change in depression scores following treatment. Perfectionism has long been linked to vulnerability to developing depression (Hewitt, Flett, & Ediger, 1996). The present findings provide additional evidence for the association between perfectionism and higher levels of depressive symptoms and suggest that need for approval, although possibly an important factor with regard to other aspects of affective symptomatology, is not significantly related to increased levels of depressive symptoms.

In contrast with hypotheses, perfectionistic attitudes were not the only cognitive style associated with increased depressive symptomatology. Higher levels of concerns about the cognitive symptoms associated with anxiety were associated with increased levels of both cognitive and somatic symptoms of depression. In contrast, increased levels of concerns about the physical symptoms of anxiety were associated with lower levels of both cognitive and somatic symptoms of depression. This association between anxiety sensitivity and depressive symptoms is consistent with prior research (e.g., Taylor, Koch, Woody, & McLean, 1996), which found a similar pattern of results, as well as with research that found relations between anxiety sensitivity and depressive symptoms (i.e., Cox, Enns, Freeman, & Walker 2001a; Reardon & Williams, 2007). Other research, however, has found support for the specificity of anxiety sensitivity as a predictor of anxiety symptoms (Ho et al., 2011). One possible explanation for the divergent findings may be the methodology for examining these relations. While some research has found an association between anxiety sensitivity and depression has explored those relations using factors for each construct (e.g., Cox et al., 2001a), other studies have explored the relations between global constructs (e.g., Ho et al., 2011). The present findings suggest that these relations should be explored separately between factors of anxiety sensitivity and affective symptomatology, as evaluating relations between global constructs may result in an unclear picture.

One possible explanation for the present findings is that individuals who are preoccupied with concerns about the cognitive implications of symptoms of anxiety (i.e., “I may be going crazy,” or “there’s something wrong with my mind”) may be more likely to engage in catastrophization. Previous research has implicated rumination as a mediator between depressive symptoms and anxiety sensitivity, particularly with regard to concern about the cognitive

implications of anxiety symptoms (Cox, Enns, & Taylor, 2001b). Accordingly, anxiety sensitivity may reflect a general preoccupation with cognitive processes and therefore serve as an additional mediating factor between parenting and the development of affective symptomatology.

Alternatively, the relation observed between anxiety sensitivity and depressive symptoms may reflect the degree of overlap between symptoms of anxiety and those of depression. However, this explanation is unlikely to account for the negative relation observed between concern about the physical implications of anxiety and symptoms of depression. Instead it is possible that increased concerns about the physical symptoms of anxiety reflect a preoccupation with health and symptoms that are unlikely to present in depression (e.g., racing heart, shortness of breath). To this end, individuals who are more concerned about the physical symptoms of anxiety, including hyperarousal, may be less inclined to focus on common symptoms of both depression and anxiety; as such, they may be less likely to develop depressive symptoms. In sum, the present results support continuing to evaluate anxiety sensitivity in the context of depressive symptoms and to evaluate the separate factors of anxiety sensitivity individually rather than using a global index.

Cognitive styles and affective symptomatology: Anxious symptoms. Higher levels of reported general cognitive symptoms of anxiety were associated with higher levels of need for approval and of concerns about the mental symptoms of anxiety. Although the relation between anxiety sensitivity and general cognitive symptoms of anxiety was consistent with hypotheses, it was surprising that need for approval was also a significant predictor. Although dysfunctional attitudes have predominantly been studied in relation to depression, they have also been associated with common psychological disorders (e.g., depression, anxiety; Weich, Churchill, &

Lewis, 2003); one study also failed to find differences in dysfunctional attitudes between individuals with social anxiety and those with depression (Sanz & Avia, 1994). It is possible that individuals who have a higher need for others to approve of them may be more likely to experience anxiety whenever they perceive others may judge them. This may be particularly key for social or generalized anxiety, which often involve some amount of social comparison. Additionally several of the anxiety symptoms comprising this factor involve a cognitive element; as the need for approval factor is considered “cognitive,” the association may reflect cognitive aspects of anxiety more broadly.

Similarly the association between concerns about the cognitive symptoms of anxiety and general aspects of fear likely reflects similar constructs. Specifically, the symptoms about which individuals worry are similar in content to those comprising this factor of anxiety sensitivity. Not surprisingly, the two constructs are positively related. Although the direction of this relation cannot be determined given the cross-sectional nature of this study, this finding suggests that individuals with heightened concerns about cognitive symptoms of anxiety report experiencing more of those symptoms. This could reflect either heightened awareness of such symptoms, increased presence of these symptoms, or a combination of the two. Regardless, the present study supports the assessment of individuals’ cognitive symptoms of anxiety when assessing cognitive factors related to the development of anxious symptomatology.

Interestingly, perceived lack of steadiness was also positively related to concerns about the cognitive symptoms of anxiety, with higher levels of the former associated with increased levels of the latter. This was in keeping with hypotheses, although it was surprising that concerns about the physical symptoms of anxiety were not also a predictor of this factor. It is possible that these symptoms may be more related to the perception of physical problems than to the actual

presence of symptoms. As well, lack of steadiness may also encompass perceptions of mental steadiness, which would be influenced by concerns about cognitive implications of anxiety. Alternatively these constructs may be linked by a third factor, such as rumination. The presence of concerns may lead to hypervigilance for any unsteadiness, and, upon detection, result in rumination about the implications, which in turn could result in increased unsteadiness. Regardless the present findings provide additional support for the specificity of anxiety sensitivity in predicting certain types of anxiety symptoms.

Fear of dying was uniquely predicted by concerns about the physical symptoms of anxiety, consistent with hypotheses. Not surprisingly, concerns about physical symptoms were strongly related to anxiety about a negative physical outcome. However self-reported physical symptoms of fear were unrelated to any of the cognitive styles measured in the study. In contrast to hypotheses, fears about physical symptoms were not significantly associated with actual symptoms of fear. This finding suggests that the actual physical symptoms associated with anxiety may be more biological in nature; transmission of these symptoms may have more to do with underlying genetic sensitivity to the environment and a higher basal stress response than to parenting styles per se.

In sum, aspects of anxiety sensitivity were unique predictors only for lack of steadiness and fear of dying. Both cognitive aspects of anxiety sensitivity and need for approval were significant predictors of general symptoms of anxiety. Taken together, these findings are suggestive of a unique role for anxiety sensitivity in the more somatic symptoms of anxiety. The cognitive symptoms of anxiety may thus be predicted by cognitive attributions and concerns. These cognitions may reflect more generalized distress, with specific fears related to particular

symptoms, consistent with theories of development of affective symptomatology (e.g., Beck et al., 1967; Clark & Watson, 1991).

Effect of Family History of Affective Symptomatology and Personal History of Depression and Anxiety

The pattern of relations between constructs did not significantly change when covariates were individually and collectively added to the model. Since the relations between constructs varied in degree but not in direction, it seems likely that the general pattern of relations between constructs is generally stable. Although the degree to which participants' endorse experiencing particular aspects of constructs may vary depending on outside factors (i.e., negative life events), the same pattern of findings was observed regardless of psychological background. This is important as it suggests that there may be a common pathway between these factors irrespective of personal or family history of psychopathology.

Family history of depression was associated with increased need for approval. Individuals whose parents experienced depression may have had parents who had more difficulty providing positive reinforcement and encouragement. However, there were no significant differences with regard to parental care, overprotection, and intrusiveness, as might have been expected with such a hypothesis. An alternate hypothesis suggests that those individuals who had at least one parent with depression may have been forced to rely on others for feedback and care. As such, they may have developed an overly valued sense of approval from others.

Similarly family history of anxiety was only associated with one construct: increased levels of physical symptoms of anxiety. This finding may reflect one aspect of heritability of anxiety, namely the genetic propensity for heightened stress responses. As none of the other factors associated with anxiety were associated with family history of anxiety, it seems likely that the

connection between parental history of anxiety and physical symptoms of anxiety has a biological basis.

Although family history of depression and anxiety were significantly associated with few constructs in the model, personal history of depression was associated with a number of factors. Specifically, those who endorsed experiencing at least one depressive episode reported lower levels of maternal and paternal care. Interestingly, parental overprotection and intrusiveness were not significantly associated with personal history of depression. Although inconsistent with research implicating “affectionless control” with vulnerability to depression (e.g., Betts et al., 2009; Parker 1979), this pattern of findings is consistent with other research that highlighted the importance of parental care (Ingram et al., 1998). For individuals who developed a depressive episode, parental care may play a particularly important role.

Dysfunctional attitudes may also play a key role. Although some research has failed to find support for dysfunctional attitudes as predictors of depressive episodes when past history of depression was accounted for (i.e., Otto et al., 2007), the present study observed higher levels of dysfunctional attitudes in individuals with a history of depression. The presence of higher levels of perfectionistic attitudes and need for approval from others may represent either a “scar” from the previous depressive episode or represent trait-like cognitions. Additionally, those individuals endorsed higher levels of anxiety sensitivity, which may be further evidence for the non-specificity of anxiety sensitivity. These findings may also provide some support for the shared vulnerability part of the tripartite model (Watson & Clark, 1991). While that model posits a general distress factor as the common denominator between anxiety and depression, those disorders may share some common negative schemas. Given the high degree of overlap between anxiety and depressive symptoms and the link between parenting and anxiety sensitivity, it

seems likely that those individuals vulnerable to developing negative cognitions related to anxiety may also be vulnerable to developing depressive symptoms. Without longitudinal data, however, determining the specific progression from cognitive bias to symptomatology to residual cognitive symptoms is difficult.

Increased reporting of affective symptomatology was also present in individuals with a history of depression. Specifically they endorsed experiencing increased levels of both cognitive and somatic symptoms of depression, general cognitive symptoms of anxiety, and lack of steadiness. These findings are consistent with research suggesting that, once individuals experience one depressive episode, they are more likely to experience future symptoms (see Boland & Keller, 2009 for review). Those aspects of anxiety endorsed may represent symptoms both related depression (e.g., fear of the worst happening) and those symptoms commonly presenting in individuals with both types of affective symptomatology.

Summary and Implications

In sum, these findings further link aspects of perceived parenting with affective symptomatology and implicate cognitive styles as mediators between the two. Specifically, increased levels of maternal and paternal care were associated with lower levels of perfectionistic attitudes and lower levels of depressive symptoms. Maternal overprotection was specifically associated with increased levels of concerns about the cognitive symptoms of anxiety, which in turn were associated with higher levels of depressive symptoms, increased general fear symptoms and lack of steadiness. Parental intrusiveness was associated with lower levels of concern about the physical symptoms of anxiety, while maternal overprotection was associated with higher levels of such concerns; these fears about the physical symptoms of anxiety were associated with lower levels of depressive symptoms but increased fears about

dying. Although not associated with any aspects of parenting behavior, need for approval was associated with higher levels of general fear.

Taken together, these findings suggest that parenting may directly influence the presence of affective symptomatology at least in part through the development of maladaptive cognitive styles. Interactions with parents or other primary caregivers may help individuals internalize beliefs about themselves and the way they interact with the world. Such beliefs may then help them interpret information from and determine responses to environmental stressors; those responses presumably then influence the development of affective symptomatology. In the present study, maternal parenting was associated with a broader range of cognitive styles than paternal bonding, suggesting that maternal parenting continues to play a unique role in the development of symptomatology. Paternal care was also significantly associated with perfectionistic attitudes, suggesting that the development of perfectionism may depend in part on the overall level of parental care received. In contrast, anxiety sensitivity was primarily associated with maternal parenting. This may reflect the relative availability or frequency of interactions with a particular caregiver. Regardless of origin, these associations suggest potential targets for intervention, particularly given the mediating role of cognitive styles.

Although perfectionism was specifically associated with heightened levels of depressive symptoms, anxiety sensitivity was a non-specific predictor of both anxiety and depressive symptoms. This suggests that the constructs tapped by anxiety sensitivity may represent a more general vulnerability to developing affective symptomatology. Individuals with negative attributions about themselves, interactions with the world, or about the meaning of anxiety symptoms may have difficulty regulating responses to stress. Those dysregulated responses may then cause increased stress, negative attributions about the individual's ability to manage

emotions, and thus increased negative affect. Such a spiral may lead to the development of affective symptomatology. Notably these pathways did not differ in direction between individuals with and without a history of a depressive episode, suggesting that the mediating role of cognitive styles between parenting and symptomatology is unlikely to be an artifact resulting from the depressive episode.

The present study provides additional support for the role of cognition in the presence of affective symptomatology; it also provides insight into the possible multifinality associated with parental behaviors. Specifically the particular cognitive schemas that individuals have may determine specific vulnerability to symptomatology. For example, those who may be uniquely vulnerable to developing depressive symptoms may have heightened levels of perfectionistic attitudes, whereas individuals who may be vulnerable specifically to anxiety may have heightened concerns about the physical symptoms of anxiety. For individuals who may be equally vulnerable to developing anxiety and depression, heightened levels may be present of both perfectionistic attitudes and concerns about the cognitive symptoms of anxiety. Exploration of the particular relations between these cognitive styles and symptom clusters may help explain the high degree of comorbidity between anxiety and depression.

Limitations

Although the present study helps elucidate the mediating role of dysfunctional attitudes and anxiety sensitivity between perceived parenting and aspects of affective symptomatology, it has several limitations. This study was conducted as a cross-sectional survey of undergraduates. Since all measurements of affective symptoms were conducted simultaneously with those of cognitive attitudes and parenting, it is not possible to establish causality or state anything about the way in which cognitive styles and affective symptoms develop. Although the study provides

information about what those relations are at a single time point, extrapolating the present findings to predict future development of symptomatology is beyond the extent of this study.

Second the present study relied on self-report measures of all construct indicators. Self-report studies rely on participants to accurately report events and thoughts. However, individuals' reports are inherently affected by their past experiences, perceptions of desired responses, and even their motivation to complete the study. Since aspects of perceived parenting were retrospectively self-reported by participants, the reported levels of each could have been influenced by individuals' cognitive beliefs.

Further the present study explored the relation between parental bonding and symptomatology in a primarily Caucasian sample; participants on average reported having completed one year of college. Accordingly the present results have limited generalizability. Individuals who identify with other racial/ethnic groups may view parenting differently and have different parenting experiences, which could affect the relations studied presently. As well, individuals who attend college can generally be considered high achieving and may be exposed to different stressors or levels of family support than those who do not attend college. In sum, the limited diversity of the present sample precludes extensive generalization of the current findings. Future research should explore the pattern of relations between parental bonding, cognitive biases, and affective symptomatology in a more diverse sample.

Another limitation of the present study is that stressful life events and current stressors were not assessed. Past research has implicated stressful life events in both the activation of negative cognitive schemas and in the development of depressive symptoms (i.e., Seeds & Dozois, 2010). Theory also suggests that negative cognitive styles are particularly relevant in the presence of stressors (i.e., Beck, 1967). As these factors were not measured, it is difficult to

identify the degree to which cognitive styles may have been relevant for participants. Events that may be particularly anxiety provoking (e.g., giving a class speech) may have activated different schemas than more depressogenic stressors (e.g., failing an exam).

Additionally the present study evaluated only a few of the cognitive attitudes implicated in the development of depression and anxiety. Specifically, other attributions about the self, the world, and the future may be related to the development of depressive symptoms (Beck et al., 1967), whereas anxiety may be related to beliefs about the dangers of the world. Similarly a number of other parenting behaviors may influence the development of cognitive attitudes (e.g., criticism, abuse). These cognitive attitudes and parenting behaviors may interact with those measured in this study to result in increased vulnerability to affective symptomatology. Future studies should consider including measures of these constructs to gain a more nuanced understanding of the relation between parenting and symptomatology.

Finally, the present study lacked sufficient power to assess the effects of additional covariates, such as participant gender and history of an anxiety disorder. Given that women are more likely to experience both depression and anxiety, it seems probable that the specific pathways between parenting, cognitive styles, and symptomatology may differ. Assessment of these specific pathways may provide information about potential ways in which vulnerability may differ between males and females. In sum, although the present study is unable to determine causality, did not evaluate stressful life events, studied selected cognitive styles, and lacks sufficient power to evaluate potentially important covariates, it yielded insights into the potential mediating role of cognitive styles.

Future Directions

The present study supported the role of dysfunctional styles as mediators between perceived parental care, overprotection, and intrusiveness with aspects of affective symptomatology. Although maternal bonding was linked to several aspects of cognitive styles, paternal care was also a significant predictor of perfectionistic attitudes. This finding suggests that paternal bonding may contribute to the development of cognitive styles and should also be evaluated when parental behaviors are assessed.

Additionally, the present findings are consistent with one possible pathway for multifinality between parenting behaviors and affective symptomatology. Parental care and overprotection appear to be particularly linked with dysfunctional attitudes and anxiety sensitivity. In turn, fears about cognitive symptoms of anxiety were associated with both anxiety and depressive symptoms. Such concerns may be consistent with a tendency to catastrophize and ruminate on negative events, two coping styles associated with the development of affective symptomatology. Exploring this relation further, including direct assessment of rumination and related coping strategies, may help elaborate the mechanisms involved and provide additional information about multifinality as it applies to affective disorders.

Similarly future research in this area may find it helpful to evaluate the association between specific single nucleotide polymorphisms and specific cognitive attitudes or schemas. Research has linked at least one polymorphism with increased sensitivity to environmental factors, including parenting (e.g., Gibb et al., 2009). Individuals with one or more of these polymorphisms may be more sensitive to specific types of parenting behaviors and thus to developing particular cognitive styles (e.g., dysfunctional attitudes vs. anxiety sensitivity). Exploration of these possible interactions may also yield insights into ways in which cognitive styles develop, including possible moderating factors. Such information may provide targets for

proactive intervention to reduce the likelihood of developing affective symptomatology. Longitudinal assessment of these factors may also prove useful in determining how cognitive beliefs develop and mediate the development of symptomatology. Given the inherent complexities in understanding these relations, SEM is likely an appropriate analytic strategy. Use of this technique permits a broader, more nuanced exploration of the data, including modeling of multiple related constructs.

Taken together, the present findings elaborate on previous research linking cognitive styles with parenting, anxiety, and depression. Although the results are indicative of a complex picture with multiple factors likely contributing to vulnerability for these disorders, they emphasize the importance of early life interactions with parents. Increased understanding of the role parenting plays in the development of cognitive schemas may yield insights into the way affective disorders develop. Such knowledge may identify targets for intervention for the prevention of affective symptomatology. These interventions could be designed to address parenting strategies or to address specific underlying cognitive vulnerabilities to reduce individuals' likelihood of developing depression or anxiety. Doing so would likely decrease the socioeconomic impact of these disorders, reducing the global burden of disease and improving quality of life for a large number of individuals. Even if those interventions only delayed the onset of illness, a significant improvement in quality of life and decrease in the extent of impairment might be observed.

Equally important to the endeavor of understanding how these disorders develop is identifying what aspects of multifinality are linked with these illnesses. Understanding which factors lead to common and divergent pathways may lead to better prediction of which disorders may develop. Improved predictive validity may also result in better identification of individuals at risk for these disorders and thus to increased opportunities for preventing illness. Additionally

such information could inform current therapies for anxiety and depression. For example, specific elements of cognitive-behavior therapy could be developed for the unique schemas of anxiety and depression, along with a common protocol for shared cognitive and behavior processes. Furthermore, this knowledge could be used when designing and implementing dismantling studies to identify specific targets for measuring change.

In sum, increasing the current understanding of shared and unique aspects of affective symptomatology, specifically as they relate to possible predisposing factors, will likely be important for advancing current interventions. Such knowledge may also advance the identification of targets for prevention efforts. Given the prevalence and impact of affective disorders, moving towards such a model of preventive intervention is critical.

References

- Alloy, L.B., Abramson, L.Y., Smith, J.M., Gibb, B.E., & Neeren, A.M. (2006). Role of parenting and maltreatment histories in unipolar and bipolar mood disorders: Mediation by cognitive vulnerability to depression. *Clinical Child and Family Psychology Review*, 9, 23-64.
- Alnaes, R., & Torgersen, S. (1990). Parental representation in patients with major depression, anxiety disorder, and mixed conditions. *Acta Psychiatrica Scandinavica*, 81, 518-522.
- Andersson, P., & Perris, C. (2000). Perceptions of parental rearing and dysfunctional attitudes: The link between early experiences and individual vulnerability? *Nordic Journal of Psychiatry*, 54, 405-409.
- Atalay, H., Atalay, F., Karahan, D., & Çaliskan, M. (2008). Early maladaptive schemas activated in patients with obsessive-compulsive disorder: A cross-sectional study. *International Journal of Psychiatry in Clinical Practice*, 12, 268-279.
- Avagianou, P.A., & Zafiropoulou, M. (2008). Parental bonding and depression: Personality as a mediating factor. *International Journal of Adolescent Mental Health*, 20, 261-268.
- Beck, A.T. (1967). *Depression: Clinical, experimental, and theoretical aspects*. New York: Harper & Row.
- Beck, A. T. (1972). *Depression: Causes and treatment*. Philadelphia: University of Philadelphia Press.
- Beck, A.T., & Clark, D.A. (1988). Anxiety and depression: An information processing perspective. *Anxiety Research*, 1, 23-36.
- Beck, A.T., Epstein, N., Brown, G., & Steer, R.A. (1988). An inventory for measuring

- clinical anxiety: Psychometric properties. *Journal of Consulting and Clinical Psychology*, 56, 893-897.
- Beck, A. T., & Steer, R. A. (1990). Manual for the Beck Anxiety Inventory. San Antonio, TX: Psychological Corporation.
- Beck, A.T., Steer, R.A., & Ball, R. (1996). Comparison of Beck Depression Inventories-IA and -II in psychiatric outpatients. *Journal of Personality Assessment*, 67, 588-597.
- Beevers, C.G., Scott, W.D., McGeary, C., & McGeary, J.E. (2009). Negative cognitive response to a sad mood induction: Associations with polymorphisms of the serotonin transporter (5-HTTLPR) gene. *Cognition and Emotion*, 23, 726-738.
- Bennet, A., & Sterling, J. (1998). Vulnerability factors in the anxiety disorders. *British Journal of Medical Psychology*, 77, 313-321.
- Betts, J., Gullone, E., & Allen, J.S. (2009). An examination of emotion regulation, temperament, and parenting style as potential predictors of adolescent depression risk status: a correlational study. *British Journal of Developmental Psychology*, 27, 473-485.
- Blatt, S.J., & Homann, E. (1992). Parent-child interaction in the etiology of dependent and self-critical depression. *Clinical Psychology Review*, 12, 47-91.
- Blatt, S.J., Quinlan, D.M., Pilkonis, P.A., & Shea, M.T. (1995). Impact of perfectionism and need for approval on the brief treatment of depression: The national institute of mental health treatment of depression collaborative research program revisited. *Journal of Consulting and Clinical Psychology*, 63(1), 125-132.
- Boland, R.J., & Keller, M.B. (2010). Course and outcome in depression. In I.H. Gotlib, & C.L. Hammen, Eds. *Handbook of Depression*, 2nd Edition. (pp. 23-43). New York: Guilford Press.

- Bolton, C., Barrowclough, C., & Calam, R. (2009). Parental criticism and adolescent depression: Does adolescent self-evaluation act as a mediator? *Behavioural and Cognitive Psychotherapy*, 37, 553-570.
- Bowlby, J. (1973). *Attachment and loss: Vol. 2. Separation: Anxiety and anger*. New York: Basic Books.
- Bowlby, J. (1980). *Attachment and loss: Vol. 3. Loss, sadness, and depression*. New York: Basic Books.
- Brown, T.A. (2006). *Confirmatory factor analysis for applied research*. New York: Guilford Press.
- Cane, D.B., Olinger, L.J., Gotlib, I.H., & Kuiper, N.A. (1986). Factor structure of the Dysfunctional Attitude Scale in a student population. *Journal of Clinical Psychology*, 42, 307-309.
- Canetti, B., Bachar, E., Galili-Weisstub, E., Kaplan, D. A., & Shalev, A. Y. (1997). Parental bonding and mental health in adolescence. *Adolescence*, 32, 381-394.
- Carter, M.M., Sbrocco, T., Lewis, E.L., & Friedman, E.K. (2001). Parental bonding and anxiety: Differences between African American and European American college students. *Journal of Anxiety Disorders*, 15, 555-569.
- Clark, L.A., & Watson, D. (1991). Tripartite model of anxiety and depression: Psychometric evidence and taxonomic implications. *Journal of Abnormal Psychology*, 100, 316-336.
- Cole, J.D., & Kazarian, S.S. (1988) The level of expressed emotion scale: a new measure of expressed emotion. *Journal of Clinical Psychology*, 44, 392-397.
- Cox, B.J., Enns, M.W., Freeman, P., & Walker, J.R. (2001a). Anxiety sensitivity and major

- depression: Examination of affective state dependence. *Behavior Research and Therapy*, 39, 1349-1356.
- Cox, B.J., Enns, M.W., & Taylor, S. (2001b). The effect of rumination as a mediator of elevated anxiety sensitivity in major depression. *Cognitive Therapy and Research*, 25, 525-534.
- Dale, R., Power, K., Kane, S., Stewart, A.M., & Murray, L. (2010). The role of parental bonding and early maladaptive schemas in the risk of suicidal behavior repetition. *Archives of Suicide Research*, 14, 311-328.
- Davila, J., Ramsay, M., Stroud, C.B., & Steinberg, S. (2005). Attachment as vulnerability to the development of psychopathology. In B.L. Hankin & J.R.Z. Abela (Eds.). *Development of psychopathology: A vulnerability-stress perspective* (pp. 215-242). Thousand Oaks, CA: Sage.
- Eberhart, N.K., Auerbach, R.P., Bigda-Peyton, J., & Abela, J.R.Z. (2011). Maladaptive schemas and depression: Tests of stress generation and diathesis-stress models. *Journal of Social and Clinical Psychology*, 30, 75-104.
- Enns, M. W., Cox, B. J., & Clara, I. (2002a). Adaptive and maladaptive perfectionism: Developmental origins and association with depression proneness. *Personality and Individual Differences*, 33, 921-935.
- Enns, M. W., Cox, B. J., & Clara, I. (2002b). Parental bonding and adult psychopathology: Results from the US national comorbidity survey. *Psychological Medicine: A Journal of Research in Psychiatry and the Allied Sciences*, 32, 997-1008.
- First, M.B., Spitzer, R.L., Gibbon, M., & Williams, J.B.W. (2002). Structured Clinical

- Interview for the DSM-IV-TR Axis I Disorders – Non-patient Edition (SCID I/NP, 11/2002 revision). New York: Biometrics Research, New York State Psychiatric Institute.
- Frye, A.A., & Garber, J. (2005). The relations among maternal depression, maternal criticism, and adolescents' externalizing and internalizing symptoms. *Journal of Abnormal Child Psychology*, 33, 1-11.
- Gallagher, B., & Cartwright-Hatton, S. (2008). The relationship between parenting factors and trait anxiety: Mediating role of cognitive errors and metacognition. *Journal of Anxiety Disorders*, 22, 722-733.
- Garnefski, N., Kraaij, V., & Spinhoven, P.H. (2001). Negative life events, cognitive emotion regulation and depression. *Personality and Individual Differences*, 30, 1311-1327.
- Gemar, M.C., Segal, Z.V., Sagrati, S., & Kennedy, S.J. (2001). Mood-induced changes on the Implicit Association Test in recovered depressed patients. *Journal of Abnormal Psychology*, 110, 282–289.
- Gerlsma, C., & Hale III, W.W. (1997) Predictive power and construct validity of the level of expressed emotion (LEE) scale: Depressed out-patients and couples from the general community. *British Journal of Psychiatry* 170, 520–525.
- Gerlsma, C., van der Lubbe, P.M., & van Nieuwenhuizen, C. (1992) Factor analysis of the level of expressed emotion scale, a questionnaire intended to measure “perceived expressed emotion.” *British Journal of Psychiatry* 160, 385–389.
- Gibb, B.E., Uhrlass, D.J., Grassia, M., Benas, J.S., & McGeary, J. (2009). Children's inferential

- styles, 5-HTTLPR genotype, and maternal expressed emotion-criticism: An integrated model for the intergenerational transmission of depression. *Journal of Abnormal Psychology, 118*, 734-745.
- Gladstone, G. L., & Parker, G. B. (2005). The role of parenting in the development of psychopathology: An overview of research using the Parental Bonding Instrument. In J. Hudson & R. M. Rapee (Eds.). *Psychopathology and the family* (pp 21-33). New York, NY: Elsevier Science.
- Graham, J.W., Olchowski, A.E., & Gilreath, T.D. (2007). How many imputations are really needed? Some practical clarifications of multiple imputation theory. *Prevention Science, 8*, 2006-213.
- Grotmol, K. S., Ekeberg, O., Finset, A., Gude, T., Moum, T., & Tyssen, R. (2010). Parental bonding and self-esteem as predictors of severe depressive symptoms. *Journal of Nervous and Mental Disease, 198*, 22-27.
- Hale III, W.H., Raaijmakers, Q.A.W., Gerlsma, C., & Meeus, W. (2007). Does the level of expressed emotion (LEE) questionnaire have the same factor structure for adolescents as it has for adults? *Social Psychiatry: Psychiatric Epidemiology, 42*, 215-220.
- Hall, S.S. (2005). Change in paternal involvement from 1977 to 1997: A cohort analysis. *Family and Consumer Sciences Research Journal, 34*, 127-139.
- Handa, H., Ito, A., Tsuda, H., Ohsawa, I., & Ogawa, T. (2009). Low level of parental bonding might be a risk factor among women with prolonged depression: A preliminary investigation. *Psychiatry and Clinical Neurosciences, 63*, 721-729.
- Hankin, B.L. (2005). Childhood maltreatment and psychopathology: Prospective tests of

- attachment, cognitive vulnerability, and stress as mediating processes. *Cognitive Therapy and Research*, 29, 645-671.
- Heider, D., Matschinger, H., Bernert, S., Alonso, J., Brugha, T.,...& Angermeyer, M.C. (2008). Adverse parenting as a risk factor in the occurrence of anxiety disorders: A study in six European countries. *Social Psychiatry and Psychiatric Epidemiology*, 43, 266-272.
- Hedley, L.M., Hoffart, A., & Sexton, H. (2001). Early maladaptive schemas in patients with panic disorder with agoraphobia. *Journal of Cognitive Psychotherapy*, 15, 131-142.
- Hewitt, P.L., Flett, G.L., & Ediger, E. (1996). Perfectionism and depression: Longitudinal assessment of a specific vulnerability hypothesis. *Journal of Abnormal Psychology*, 105(2), 276-280.
- Ho, M. R., Auerbach, R. P., Jun, H. L., Abela, J. R. Z., Zhu, X., & Yao, S. (2011). Understanding anxiety sensitivity in the development of anxious and depressive symptoms. *Cognitive Therapy and Research*, 35(3), 232-240.
- Hooley, J. M., Orley, J., & Teasdale, J. D. (1986). Levels of expressed emotion and relapse in depressed patients. *British Journal of Psychiatry*, 148, 642-647.
- Hooley, J.M., & Teasdale, J.D. (1989). Predictors of relapse in unipolar depressives: Expressed emotion, marital distress, and perceived criticism. *Journal of Abnormal Psychology*. 93, 229-235.
- Horn, P.J., & Wuyek, L.A. (2010). Anxiety disorders as a risk factor for depression. *International Journal of Psychiatry in Clinical Practice*, 14, 244-247.
- Hranov, L.G. (2007). Comorbid anxiety and depression: Illumination of a controversy. *International Journal of Psychiatry in Clinical Practice*, 11, 171-189.
- Ingram, R. E. (1990). Attentional nonspecificity in depressive and generalized anxious affective

- states. *Cognitive Therapy and Research*, 14, 25-35.
- Ingram, R. E., Miranda, J., & Segal, Z. V. (1998). *Cognitive vulnerability to depression*. New York, NY: Guilford Press.
- Ingram, R.E., Overbey, T., & Fortier, M. (2001). Individual differences in dysfunctional automatic thinking and parental bonding: Specificity of maternal care. *Personality and Individual Differences*, 30, 401-420.
- Ingram, R.E., & Ritter, J. (2000). Vulnerability to depression: Cognitive reactivity and parental bonding in high-risk individuals. *Journal of Abnormal Psychology*, 109, 588-596.
- Kazarian, S.S., Baker, B., & Hermes, E. (1987). The Parental Bonding Instrument: Factorial structure. *The British Psychological Society*, 26, 231-232.
- Kessler, R.C., Avenevoli, S., & Merikangas, K.R. (2001). Mood disorders in children and adolescents: An epidemiologic perspective. *Biological Psychiatry*, 49, 1002-1014.
- Kessler, R.C., & Wang, P.S. (2009). Epidemiology of depression. In I.H.Gotlib, & C.L. Hammen, Eds. *Handbook of Depression*, 2nd Edition. (pp. 5-22). New York: Guilford Press.
- Kraaij, V., Garnefski, N., de Wilde, E.J., Dijkstra, A., Gebhardt, W.,...& ter Doest, L. (2003). Negative life events and depressive symptoms in late adolescence: Bonding and cognitive coping as vulnerability factors? *Journal of Youth and Adolescence*, 32, 185-193.
- Lee, A., & Hankin, B.L. (2009). Insecure attachment, dysfunctional attitudes, and low self-esteem predicting prospective symptoms of depression and anxiety during adolescence. *Journal of Clinical Child & Adolescent Psychology*, 38, 219-231.
- Lima, A.R., Mello, M.F., & de Jesus Mari, J. (2010). The role of early parental bonding in the

- development of psychiatric symptoms in adulthood. *Current Opinion in Psychiatry*, 23, 383-387.
- Lindelöw, M. (1999). Parent–child interaction and adult depression: A prospective study. *Acta Psychiatrica Scandinavica*, 100, 270-278.
- Little, T.D., Cunningham, W.A., Shahar, G., & Widaman, K.F. (2002). To parcel or not to parcel: Exploring the question, weighing the merits. *Structural Equation Modeling*, 9, 151-173.
- Liu, Y.L. (2003). The mediators between parenting and adolescent depressive symptoms: Dysfunctional attitudes and self-worth. *International Journal of Psychology*, 38, 91-100.
- Luxton, D.D. (2007). The effects of inconsistent parenting on the development of uncertain self-esteem and depression vulnerability. (Doctoral Dissertation). University of Kansas, Lawrence, KS.
- Martin, G., Bergen, H.A., Roeger, L., & Allison, S. (2004). Depression in young adolescents: Investigations using 2 and 3 factor versions of the Parental Bonding Instrument. *Journal of Nervous and Mental Disease*, 192, 650-657.
- Matheson, K., Kelly, O., Cole, B., Tannenbaum, B., Dodd, C., & Anisman. (2005). Parental bonding and depressive affect: The mediating role of coping resources. *British Journal of Social Psychology*, 44, 371-395.
- McGinn, L.K., Cukor, D., & Sanderson, W.C. (2005). The relationship between parenting style, cognitive style, and anxiety and depression: Does increased early adversity influence symptom severity through the mediating role of cognitive style? *Cognitive Therapy and Research*, 29, 219-242.
- McLeod, B.D., Wood, J.J., & Weisz, J.R. (2007). Examining the association between parenting

- and childhood anxiety: A meta-analysis. *Clinical Psychology Review*, 27, 155-172.
- Meites, T.M., Ingram, R.E., & Segal, G. (2012). Unique and shared aspects of affective symptomatology: The role of parental bonding in depression and anxiety symptom profiles. *Cognitive Therapy and Research*, 36, 173-181.
- Miranda, J., Gross, J. J., Persons, J. B., & Hahn, J. (1998). Mood matters: Negative mood induction activates dysfunctional attitudes in women vulnerable to depression. *Cognitive Therapy and Research*, 22(4), 363-376.
- Murray, L., Creswell, C., & Cooper, P.J. (2009). The development of anxiety disorders in childhood: An integrative review. *Psychological Medicine*, 39, 1413-1423.
- Neale, M.C., Walters, E., Heath, A.C., Kessler, R.C., Perusse, D.,...& Kendler, K.S. (1994). Depression and parental bonding: Cause, consequence, or genetic covariance? *Genetic Epidemiology*, 11, 503-522.
- Nelis, S.M., Rae, G., & Liddell, C. (2011). The level of expressed emotion scale: A useful measure of expressed emotion in adolescents? *Journal of Adolescence*, 34, 311-318.
- Oakley-Browne, M.A., Joyce, P.R., Wells, J.E., Bushnell, J.A., & Hornblow, A.R. (1995). Adverse parenting and other childhood experiences as risk factors for depression in women aged 18-44 years. *Journal of Affective Disorders*, 34, 13-23.
- Osman, A., Copper, B. A., Barrios, F. X., Osman, J. R., & Wade, T. (1997) The Beck Anxiety Inventory; re-examination of factor, structure and psychometric properties. *Journal of Clinical Psychology* 53, 7-14.
- Otto, M.W., Teachman, B.A., Cohen, L.S., Soares, C.N., Vitonis, A.F., & Harlow, B.L. (2007).

- Dysfunctional attitudes and episodes of major depression: Predictive validity and temporal stability in never-depressed, depressed, and recovered women. *The Journal of Abnormal Psychology*, 116(3), 475-483.
- Parker, G. (1979). Parental characteristics in relation to depressive disorders. *British Journal of Psychiatry*, 134, 138-147.
- Parker, G. (1982). Parental representations and affective symptoms: Examination for a hereditary link. *British Journal of Medical Psychology*, 55, 57-61.
- Parker, G. (1989). The parental bonding instrument: Psychometric properties reviewed. *Psychiatric Developments*, 4, 317-335.
- Parker, G., Tupling, H., & Brown, L. B. (1979). A parental bonding instrument. *British Journal of Medical Psychology*, 52, 1-10.
- Pedersen, W. (1994). Parental relations, mental health, and delinquency in adolescents. *Adolescence*, 29, 975-990.
- Perone, K.M., Wright, S.L., & Jackson, Z.V. (2009). Traditional and nontraditional gender roles and work: Family interface for men and women. *Journal of Career Development*, 36, 8-24.
- Peterson, R.A., & Heilbronner, R.L. (1987). The anxiety sensitivity index: Construct validity and factor analytic structure. *Journal of Anxiety Disorders*, 1, 117-121.
- Peterson, R.A., & Reiss, S. (1987). *Anxiety sensitivity index manual*. Orland Park, IL: International Diagnostics Systems.
- Pinto-Gouveia, J., Castilho, P., Galhardo, A., & Cunha, M. (2006). Early maladaptive schemas and social phobia. *Cognitive Therapy and Research*, 30, 571-584.
- Randolph, J.J., & Dykman, B.M. (1998). Perceptions of parenting and depression-proneness

- in the offspring: Dysfunctional attitudes as a mediating mechanism. *Cognitive Therapy and Research*, 22, 377-400.
- Rapee, R. M. (1997). Potential role of childrearing practices in the development of anxiety and depression. *Clinical Psychology Review*, 17, 47-67.
- Reardon, J.M., & Williams, N.L. (2007). The specificity of cognitive vulnerabilities to emotional disorders: Anxiety sensitivity, looming vulnerability, and explanatory style. *Journal of Anxiety Disorders*, 21, 625-643.
- Regier, D.A., Rae, D.S., Narrow, W.E., Kaelber, C.T., & Schatzberg, A.F. (1998). Prevalence of anxiety disorders and their comorbidity with mood and addictive disorders. *British Journal of Psychiatry: Special Issue: Recognition and Management of Anxiety Syndromes*, 173, 24-28.
- Reiss, S., & McNally, R. J. (1985). The expectancy model of fear. In: S. Reiss & R. R. Bootzin (Eds.). *Theoretical issues in behavior therapy* (pp. 107-121). New York: Academic Press.
- Rey, J. M. (1995). Perceptions of poor maternal care are associated with adolescent depression. *Journal of Affective Disorders*, 34, 95-100.
- Rogers, G.M., Park, J.H., Essex, M.J., Klein, M.H., Silva, S.G., Hoyle, R.H.,...&March, J.S. (2009). The Dysfunctional Attitudes Scale: Psychometric properties in depressed adolescents. *Journal of Clinical Child and Adolescent Psychology*, 38, 781-789.
- Sanz, J., & Avia, M. D. (1994). Cognitive specificity in social anxiety and depression: Self-statements, self-focused attention, and dysfunctional attitudes. *Journal of Social and Clinical Psychology*, 13(2), 105-137.
- Schapman, A.M. (2003). The interrelationship among perceived family environment,

- control-related cognitions, and social anxiety in adolescents: An investigation of mediational and moderational models. Dissertation. Lincoln, NE: University of Nebraska.
- Schmidt, N.B., & Joiner, T.E. (2002). Structure of the anxiety sensitivity index psychometrics and factor structure in community sample. *Journal of Anxiety Disorders, 16*, 33-49.
- Seeds, P.M., & Dozois, D.J. (2010). Prospective evaluation of a cognitive vulnerability-stress model for depression: The interaction of schema self-structures and negative life events. *Journal of Clinical Psychology, 66*, 1307-1323.
- Shah, R.C., & Waller, G.D. (2000). Parental style and vulnerability to depression: The role of core beliefs. *The Journal of Nervous and Mental Disease, 188*, 19-25.
- Startup, M. (1999). Confirmatory factor analysis of the Level of Expressed Emotion scale. *Psychology and Psychotherapy: Theory, Research, and Practice, 72*, 421-424.
- Stein, D., Williamson, D.E., Birmaher, B., Brent, D.A., Kaufman, J.,... & Ryan, N.D. (2000). Parent-child bonding and family functioning in depressed children and children at high risk and low risk for future depression. *Journal of the American Academy of Child and Adolescent Psychiatry, 39*, 1387-1395.
- Storch, E. A., Roberti, J. W., & Roth, D. (2004) Factor structure, concurrent validity, and internal consistency of the Beck Depression Inventory - 2nd Edition in a sample of college students. *Depression and Anxiety 19*, 187-189.
- Taylor, S., Koch, W.J., Woody, S., & McLean, P. (1996). Anxiety sensitivity and depression: How are they related? *Journal of Abnormal Psychology, 105*, 474-479.
- Tompson, M., Pierre, C.B., Boger, K.D., McKowen, J.W., Chan, P.T., & Freed, R.D. (2010). Maternal depression, maternal expressed emotion, and youth psychopathology. *Journal of Abnormal Child Psychology, 38*, 105-117.

- Vanheule, S., Desmet, M., Groenvynck, H., Rosseel, Y., & Fontaine, J. (2008). The factor structure of the Beck Depression Inventory-II: An evaluation. *Assessment, 15*, 177-187.
- Weich, S., Churchill, R., & Lewis, G. (2003). Dysfunctional attitudes and the common mental disorders in primary care. *Journal of Affective Disorders, 75*(3), 269-278.
- Weissman, A. (1979). *The Dysfunctional Attitudes Scale: A validation study*. Unpublished doctoral dissertation, University of Pennsylvania, Philadelphia.
- Weissman, M.M., Wickramaratne, P., Adams, P., Wolk, S., Verdelli, H., & Olfson, M. (2000). Brief screening for family psychiatric history: The family history screen. *Archives of General Psychiatry, 57*, 675-682.
- Whisman, M.A., & Kwon, P. (1992). Parental representations, cognitive distortions, and mild depression. *Cognitive Therapy and Research, 16*, 557-568.
- Wilhelm, K., Niven, H., Parker, G., & Hadzi-Pavlovic, D. (2005). The stability of the parental bonding instrument over a 20-year period. *Psychological Medicine, 35*, 387-393.
- Wood, J.J., McLeod, B.D., Sigman, M., Hwang, W.C., & Chu, B.C. (2003). Parenting and childhood anxiety: Theory, empirical findings, and future directions. *Journal of Child Psychology and Psychiatry, 44*, 134-151.
- Zeidner, M., & Saklofske, D. (1996). Adaptive and maladaptive coping. In M. Zeidner and N.S. Endler (Eds.). *Handbook of coping: Theory, research, Applications*, (pp. 505-531). New York, NY: Wiley.

Table 1. Descriptive information for the present sample.

	Mean (SD)	Minimum	Maximum	Chronbach's α
Age	19.30 (1.66)	18	38	
Education	13.05 (.79)	12.00	16.50	
PBIMC	28.43 (7.71)	0.00	36.00	.93
PBIMP	13.59 (7.33)	0.00	37.00	.87
PBIFC	24.37 (8.98)	0.00	36.00	.93
PBIFP	11.72 (7.60)	0.00	38.00	.88
LEEI	18.53 (4.27)	10.00	32.00	.78
DAS	137.18 (28.08)	76.00	231.00	.81
ASI*	21.98 (10.69)	3.00	55.00	.88
BAI	18.60 (12.83)	3.00	48.00	.90
BDI	13.62 (8.75)	3.00	61.00	.90

PBIMC: Parental Bonding Instrument Maternal Care; PBIMP: Parental Bonding Instrument

Maternal Overprotection; PBIFC: Parental Bonding Instrument Paternal Care; PBIFP: Parental

Bonding Instrument Paternal Overprotection; LEEI: Level of Expressed Emotion Scale –

Intrusiveness; DAS: Dysfunctional Attitudes Scale; ASI: Anxiety Sensitivity Index; BAI: Beck

Anxiety Inventory; BDI: Beck Depression Inventory. *Anxiety Sensitivity Index information

calculated without item 5 included, since it was a duplicate item.

Table 2. Factor structure of the Beck Depression Inventory-II.

Item	Cognitive Symptoms	Somatic Symptoms
1.	.34 / .56	
2.	.40 / .59	
3.	.46 / .63	
4.		.45 / .68
6.	.38 / .55	
7.	.70 / .61	
9.	.29 / .61	
10.		.28 / .41
11.		.40 / .56
12.		.46 / .67
14.	.55 / .74	
15.		.39 / .58
16.		.28 / .36
18.		.32 / .40
19.		.39 / .52
21.		.16 / .30

Model fit: $\chi^2(103) = 220.83, p < 0.01$, RMSEA = .06, CFI = .91, TLI = .90, SRMR = .05.

Unstandardized estimates are presented first, with completely standardized estimates presented second. BDI Cognitive Symptoms Chronbach's $\alpha = .82$; Item 1. Sadness. Item 2. Pessimism.

Item 3. Past Failure. Item 6. Punishment Feelings. Item 7. Self-Dislike. Item 9. Suicidal

Thoughts or Wishes. Item 14. Worthlessness. BDI Somatic Symptoms Chronbach's $\alpha = .75$;

Item 4. Loss of Pleasure. Item 10. Crying. Item 11. Agitation. Item 12. Loss of Interest. Item 15.

Loss of Energy. Item 16. Change in Sleeping Patterns. Item 18. Changes in Appetite. Item 19.

Concentration Difficulty. Item 21. Loss of Interest in Sex.

Table 3. Factor structure of the Beck Anxiety Inventory.

Item	General Fear	Fear of Physical Symptoms	Lack of Steadiness	Fear of Dying
1.			.34 / .40	
2.		.65 / .59		
3.			.64 / .65	
4.	.69 / .59			
5.	.89 / .69			
6.			.69 / .67	
7.				.73 / .66
8.			.67 / .69	
9.	.82 / .80			
10.	.85 / .72			
11.				.31 / .49
12.			.61 / .57	
13.			.70 / .63	
14.	.80 / .70			
15.				.57 / .60
16.				.34 / .45
17.	.82 / .77			
18.		.52 / .43		
19.			.44 / .59	
20.		.68 / .69		
21.		.79 / .65		

Model fit: $\chi^2(182) = 417.90, p < .01$, RMSEA = .07, CFI = .91, TLI = .89, SRMR = .05.

Unstandardized estimates are presented first, with completely standardized estimates presented second. General Fear Chronbach's $\alpha = .86$. Item 4. Unable to relax. Item 5. Fear of the worst happening. Item 9. Terrified. Item 10. Nervous. Item 14. Fear of losing control. Item 17. Scared; Fear of Physical Symptoms Chronbach's $\alpha = .81$. Item 2. Feeling hot. Item 18. Indigestion or discomfort in abdomen. Item 20. Face flushed. Item 21. Sweating (not due to heat); Lack of Steadiness Chronbach's $\alpha = .71$. Item 1. Numbness or tingling. Item 3. Wobbliness in legs. Item 6. Dizzy or lightheaded. Item 8. Unsteady. Item 12. Hands trembling. Item 13. Shaky. Item 19. Faint; Fear of Dying Chronbach's $\alpha = .62$. Item 7. Heart pounding or racing. Item 11. Feeling of choking. Item 15. Difficulty breathing. Item 16. Fear of dying.

Table 4. Factor structure of the Dysfunctional Attitudes Scale.

Item	Perfectionism	Need for Approval
1.	.59 / .37	
3.	.85 / .57	
4.	1.05 / .65	
7.		1.17 / .74
8.	.79 / .59	
9.	1.50 / .84	
10.	1.39 / .80	
11.	1.02 / .64	
12.	.60 / .53	
13.	.62 / .50	
14.	.91 / .62	
15.	.98 / .57	
19.		1.24 / .79
21.	.88 / .52	
22.	1.00 / .61	
26.	1.01 / .66	
28.		.62 / .39
31.	.66 / .43	
32.		1.06 / .69
34.		.90 / .52
38.		1.00 / .66
39.		.71 / .42

Model fit: $\chi^2(208) = 528.15, p < .01$, RMSEA = .07, CFI = .87, TLI = .86, SRMR = .06.

Unstandardized estimates are presented first, with completely standardized estimates presented second. Perfectionism Chronbach's $\alpha = .89$; Item 1. It is difficult to be happy unless one is good looking, intelligent, rich, and creative. Item 3. People will probably think less of me if I make a mistake. Item 4. If I do not do well all the time, people will not respect me. Item 8. If a person asks for help, it is a sign of weakness. Item 9. If I do not do as well as other people, it means I am a weak person. Item 10. If I fail at my work, then I am a failure as a person. Item 11. If you cannot do something well, there is little point in doing it at all. Item 12. Making mistakes is fine because I can learn from them. Item 13. If someone disagrees with me, it probably indicates he does not like me. Item 14. If I fail partly, it is as bad as being a complete failure. Item 15. If other people know what you are really like, they will think less of you. Item 21. If I am to be a

worthwhile person, I must be the best in at least one way. Item 22. People who have good ideas are better than those who do not. Item 26. If I ask a question, it makes me look stupid. Item 31. I cannot trust other people because they might be cruel to me. Need for Approval Chronbach's $\alpha = .80$; Item 7. I cannot be happy unless most people I know admire me. Item 19. My value as a person depends greatly on what others think of me. Item 28. If you don't have other people to lean on, you are going to be sad. Item 32. If others dislike you, you cannot be happy. Item 34. My happiness depends more on other people than it does on me. Item 38. What other people think about me is very important. Item 39. Being alone leads to unhappiness.

Table 5. Factor structure of the Anxiety Sensitivity Index.

Item	Fear of Mental Symptoms	Fear of Physical Symptoms
2.	.59 / .51	
6.		.90 / .71
8.		.77 / .58
9.		.78 / .71
10.		1.01 / .79
11.	.64 / .58	
12.	.58 / .49	
13.	.61 / .54	
15.	.52 / .56	
16.	.76 / .63	

Model fit: $\chi^2(32) = 104.40, p < .01$, RMSEA = .09, CFI = .93, TLI = .90, SRMR = 0.05.

Unstandardized estimates are presented first, with completely standardized estimates presented second. Fear of Mental Symptoms Chronbach's $\alpha = .76$; Item 6. It scares me when my heart beats rapidly. Item 8. It scares me when I am nauseous. Item 9. When I notice that my heart is beating rapidly, I worry that I may have a heart attack. Item 10. It scares me when I am short of breath. Fear of Physical Symptoms Chronbach's $\alpha = .79$. Item 2. When I cannot keep my mind on a task, I worry that I might be going crazy. Item 11. When my stomach is upset, I worry that I might be seriously ill. Item 12. It scares me when I am unable to keep my mind on a task. Item 13. Other people notice when I feel shaky. Item 15. When I am nervous, I worry that I am mentally ill. Item 16. It scares me when I am nervous.

Table 6. Factor structure of the Parental Bonding Instrument.

Item	Maternal Care	Maternal Protection	Paternal Care	Paternal Protection
1.	.54 / .75		.69 / .77	
2.	.57 / .63		.69 / .67	
3.		.57 / .72		.55 / .63
4.	.57 / .72		.71 / .73	
5.	.71 / .78		.67 / .75	
6.	.59 / .82		.78 / .81	
7.		.51 / .62		.66 / .73
8.		.21 / .21		.23 / .21
9.		.71 / .72		.79 / .79
10.		.67 / .68		.61 / .65
11.	.64 / .72		.73 / .72	
12.	.60 / .73		.79 / .80	
13.		.16 / .15		.15 / .15
14.	.66 / .66		.66 / .63	
15.		.60 / .71		.63 / .70
16.	.53 / .65		.60 / .68	
17.	.75 / .82		.77 / .77	
18.	.68 / .80		.76 / .73	
19.		.41 / .49		.31 / .44
20.		.48 / .57		.41 / .52
21.		.65 / .64		.71 / .69
22.		.59 / .56		.64 / .60
23.		.64 / .61		.49 / .47
24.	.50 / .58		.59 / .61	
25.		.42 / .44		.51 / .49

Model fit: $\chi^2 (1167) = 3192.95, p < .01$, RMSEA = .08, CFI = .77, TLI = .76, SRMR = .09.

Unstandardized estimates are presented first, with completely standardized estimates presented second. Maternal/paternal Care: Item 1. Spoke to me with a warm and friendly voice. Item 2. Did not help me as much as I need. Item 4. Seemed emotionally cold to me. Item 5. Appeared to understand my problems and worries. Item 6. Was affectionate to me. Item 11. Enjoyed talking things over with me. Item 12. Frequently smiled at me. Item 14. Did not seem to understand what I needed or wanted. Item 16. Made me feel as if I wasn't wanted. Item 17. Could make me feel better when I was upset. Item 18. Did not talk with me very much. Item 24. Did not praise me. Maternal/paternal Protection: Item 3. Let me do those things I liked doing. Item 7. Liked me

to make my own decisions. Item 8. Did not want me to grow up. Item 9. Tried to control everything I did. Item 10. Invaded my privacy. Item 13. Tended to baby me. Item 15. Let me decide things for myself. Item 19. Tried to make me dependent on her. Item 20. Felt I could not look after myself unless he/she was around. Item 21. Gave me as much freedom as I wanted. Item 22. Let me go out as often as I wanted. Item 23. Was overprotective of me. Item 25. Let me dress in any way I pleased.

Table 7. Factor structure of the Level of Expressed Emotion Intrusiveness subscale.

Item	Intrusiveness
9.	.27 / .34
29.	.24 / .27
33.	.67 / .81
37.	.60 / .70
41.	.46 / .46
45.	.61 / .75
49.	.28 / .41
57.	.55 / .60

Model fit: $\chi^2(20) = 93.17, p < .01$, RMSEA = .11, CFI = .88, TLI = .83, SRMR = .06.

Unstandardized estimates are presented first, with completely standardized estimates presented second. Item 9. Isn't overprotective with me. Item 29. Often checks up on me to see what I'm doing. Item 33. Is always nosing into my business. Item 37. Always has to know everything about me. Item 41. Insists on knowing where I'm going. Item 45. Butts into my private matters. Item 49. Doesn't pry into my life. Item 57. Gets upset when I don't check in with him/her.

Table 8. Fit indices for all models.

Model	χ^2	<i>df</i>	<i>p</i>	RMSEA	90% C.I.	CFI	TLI	SRMR
Partial Mediation	1580.36	979	.00	.05	.04-.05	.93	.92	.06
Full Mediation	1626.62	1009	.00	.05	.04-.05	.92	.92	.06
Full Mediation with Covariates 1	1682.52	1047	.00	.05	.04-.05	.92	.91	.06
Full Mediation with Covariates 2	1719.15	1075	.00	.04	.04-.05	.92	.91	.06
Full Mediation with Covariates 3	1762.91	1108	.00	.04	.04-.05	.91	.92	.06

Mediation was conducted between aspects of parenting and affective symptomatology. Covariates entered in each model included: 1 family history of depression; 2 family history of depression and family history of anxiety; 3 family history of depression, family history of anxiety, and personal history of depression.

Table 9. Correlations between the latent parenting constructs in the full mediation model including the covariates of family history of depression and anxiety, and personal history of depression.

	PBIMC	PBIMP	PBIFC	PBIFP
PBIMP	-.49**			
PBIFC	.37**	-.23**		
PBIFP	-.19**	.52**	-.38**	
LEEI	-.19**	.57**	-.11	.37**

* $p < .05$. ** $p < .01$. PBIMC: Parental Bonding Instrument Maternal Care. PBIMP: Parental Bonding Instrument Maternal Protection. PBIFC: Parental Bonding Instrument Paternal Care. PBIFP: Parental Bonding Instrument Paternal Protection. LEEI: Level of Expressed Emotion: Intrusiveness.

Table 10. Correlations between the latent affective symptomatology constructs in the full mediation model, including the covariates of family history of depression and anxiety, and personal history of depression.

	BDIC	BDIS	BAIGF	BAIPF	BAILS
BDIS	.77**				
BAIGF	.25*	.15			
BAIPF	-.01	.35**	.30**		
BAILS	.02	.25*	.47**	.64**	
BAIFD	.22	.30*	.70**	.72**	.88**

* $p < .05$. ** $p < .01$. BDIC: Beck Depression Inventory-II: Cognitive Symptoms. BDIS: Beck

Depression Inventory-II: Somatic Symptoms. BAIGF: Beck Anxiety Inventory: General Fear. BAIPF:

Beck Anxiety Inventory: Fear of Physical Symptoms. BAILS: Beck Anxiety Inventory: Lack of

Steadiness. BAIFD: Beck Anxiety Inventory: Fear of Dying.

Table 11. Standardized Estimates for Loading, Intercept, And Residual Variance Values for Each Indicator.

Construct	Indicator	Loading	Intercept	Residual Variance
BAIGF	BAIGF1	.85	.97	.28
	BAIGF2	.84	.93	.30
	BAIGF3	.84	1.08	.29
BAILSTD	BAILST1	.90	.62	.19
	BAILST2	.88	.71	.22
	BAILST3	.68	.62	.54
BAIFD	BAI7	.63	.85	.60
	BAI11	.49	.13	.76
	BAI15	.61	.32	.63
	BAI16	.45	.20	.79
BAIPHF	BAI2	.59	.15	.66
	BAI18	.45	.70	.80
	BAI20	.69	.39	.53
	BAI21	.64	.54	.59
BDICOG	BDIC1	.82	.67	.32
	BDIC2	.74	.73	.46
	BDIC3	.74	.76	.46
BDISOM	BDIS1	.74	.85	.46
	BDIS2	.71	1.37	.49
	BDIS3	.72	.91	.48
DASP	DASPER1	.89	4.25	.21
	DASPER2	.84	5.07	.29
	DASPER3	.88	4.77	.23
DASA	DASAPPR1	.74	3.15	.45
	DASAPPR2	.74	3.77	.45
	DASAPPR3	.82	3.40	.33
ASIM	ASIM1	.72	.67	.49
	ASIM2	.65	1.12	.58
	ASIM3	.73	1.04	.47
ASIP	ASI6	.71	1.31	.50
	ASI8	.57	1.18	.67

	ASI9	.72	.56	.49
	ASI10	.78	.96	.39
PBIMC	PBIMC1	.91	3.61	.18
	PBIMC2	.90	3.35	.19
	PBIMC3	.92	3.53	.16
PBIMP	PBIMP1	.80	2.05	.35
	PBIMP2	.83	1.28	.32
	PBIMP3	.83	1.53	.32
PBIFC	PBIFC1	.89	2.64	.21
	PBIFC2	.88	2.31	.23
	PBIFC3	.93	2.79	.13
PBIFP	PBIFP1	.72	1.35	.48
	PBIFP2	.83	1.35	.32
	PBIFP3	.93	1.40	.13
LEEI	LEEINT1	.75	4.42	.44
	LEEINT2	.78	3.90	.39
	LEEINT3	.83	2.68	.32

Indicators consisting of the construct name and a number represent parcels, whereas those indicators identified by the questionnaire and a number represent an item from that questionnaire. BAIGF: Beck Anxiety Inventory: General Fear. BAIPF: Beck Anxiety Inventory: Fear of Physical Symptoms. BAILS: Beck Anxiety Inventory: Lack of Steadiness. BAIFD: Beck Anxiety Inventory: Fear of Dying. BDIC: Beck Depression Inventory-II: Cognitive Symptoms. BDIS: Beck Depression Inventory-II: Somatic Symptoms. DASP: Dysfunctional Attitudes Scale Perfectionism. DASA: Dysfunctional Attitudes Scale Need for Approval. ASIM: Anxiety Sensitivity Index Fear of Mental Symptoms. ASIP: Anxiety Sensitivity Index Fear of Physical Symptoms. PBIMC: Parental Bonding Instrument Maternal Care. PBIMP: Parental Bonding Instrument Maternal Protection. PBIFC: Parental Bonding Instrument Paternal Care. PBIFP: Parental Bonding Instrument Paternal Protection. LEEI: Level of Expressed Emotion: Intrusiveness.

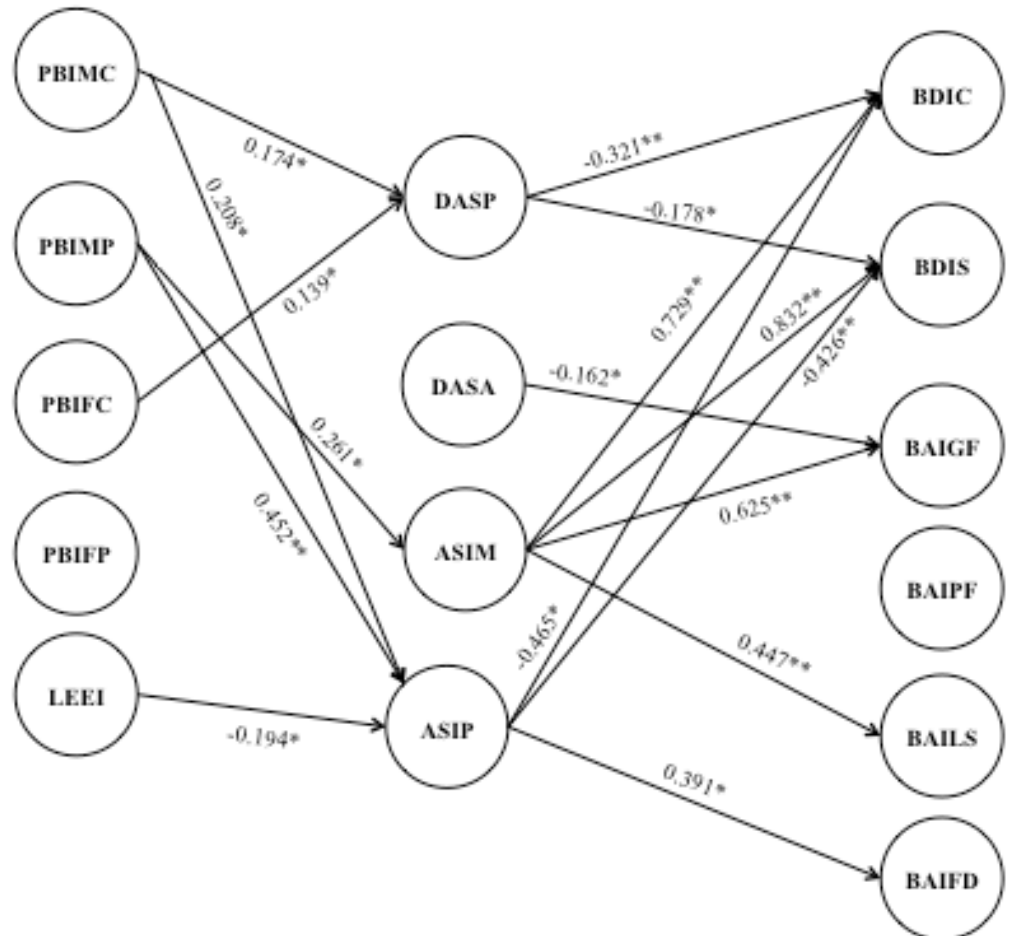
Table 12. γ Estimates for each covariate and construct

Construct	Family History of Depression	Family History of Anxiety	History of Depression
BAIGF	-.00	.03	.17**
BAILSTD	.00	.03	.17**
BAIFD	.06	.10	.10
BAIPHF	.08	.14*	.11
BDIC	-.04	-.01	.22**
BDIS	.02	.06	.27**
DASP	.02	.02	-.20**
DASA	.15*	.01	-.19**
ASIM	.12	.08	.25**
ASIP	-.05	.08	.20**
PBIMC	-.10	-.06	-.21**
PBIMP	-.05	.10	.02
PBIFC	-.04	-.09	-.21**
PBIFP	-.01	.07	.07
LEEI	-.02	.11	.02

* $p < 0.05$, ** $p < 0.01$. Mean difference calculated by presence of covariate (“1”) – absence of covariate

(“0”). BAIGF: Beck Anxiety Inventory: General Fear. BAIPF: Beck Anxiety Inventory: Fear of Physical Symptoms. BAILS: Beck Anxiety Inventory: Lack of Steadiness. BAIFD: Beck Anxiety Inventory: Fear of Dying. BDIC: Beck Depression Inventory-II: Cognitive Symptoms. BDIS: Beck Depression Inventory-II: Somatic Symptoms. DASP: Dysfunctional Attitudes Scale Perfectionism. DASA: Dysfunctional Attitudes Scale Need for Approval. ASIM: Anxiety Sensitivity Index Fear of Mental Symptoms. ASIP: Anxiety Sensitivity Index Fear of Physical Symptoms. PBIMC: Parental Bonding Instrument Maternal Care. PBIMP: Parental Bonding Instrument Maternal Protection. PBIFC: Parental Bonding Instrument Paternal Care. PBIFP: Parental Bonding Instrument Paternal Protection. LEEI: Level of Expressed Emotion: Intrusiveness.

Figure 1. Full mediation model controlling for family history of depression, family history of anxiety, and personal history of depression. Significant paths only are presented here.



* $p < .05$. ** $p < .01$. PBIMC: Parental Bonding Instrument Maternal Care. PBIMP: Parental Bonding Instrument Maternal Protection. PBIFC: Parental Bonding Instrument Paternal Care. PBIFP: Parental Bonding Instrument Paternal Protection. LEEI: Level of Expressed Emotion: Intrusiveness. DASP: Dysfunctional Attitudes Scale Perfectionism. DASA: Dysfunctional Attitudes Scale Need for Approval. ASIM: Anxiety Sensitivity Index Fear of Mental Symptoms. ASIP: Anxiety Sensitivity Index Fear of Physical Symptoms. BDIC: Beck Depression Inventory-II: Cognitive Symptoms. BDIS: Beck Depression Inventory-II: Somatic Symptoms. BAIGF: Beck Anxiety Inventory: General Fear. BAIPF:

Beck Anxiety Inventory: Fear of Physical Symptoms. BAILS: Beck Anxiety Inventory: Lack of Steadiness. BAIFD: Beck Anxiety Inventory: Fear of Dying.

Appendix A. Beck Depression Inventory-II.

Instructions: On this questionnaire are groups of statements. Please read all the statements in a given group. Then pick out at least **one** statement in each group, which describes you best in terms of the past 2 weeks. Circle the number beside the statement you have chosen. If several statements in the group seem to apply equally well, circle each one. Be sure to read all the statements in each group before making your choice(s).

1) Sadness

- 0 I do not feel sad.
- 1 I feel sad much of the time.
- 2 I am sad all the time.
- 3 I am so sad or unhappy that I can't stand it.

2) Pessimism

- 0 I am not discouraged about my future.
- 1 I feel more discourage about my future than I used to be.
- 2 I do not expect things to work out for me.
- 3 I feel that my future is hopeless and will only get worse.

3) Past Failure

- 0 I do not feel like a failure.
- 1 I have failed more than I should have.
- 2 As I look back, I see a lot of failures.
- 3 I feel I am a total failure as a person.

4) Loss of Pleasure

- 0 I get as much pleasure as I ever did from the things I enjoy.
- 1 I don't enjoy things as much as I used to.
- 2 I get very little pleasure from the things I used to enjoy.
- 3 I can't get any pleasure from the things I used to enjoy.

5) Guilty Feelings

- 0 I don't feel particularly guilty.
- 1 I feel guilty over many things I have done or should have done.
- 2 I feel quite guilty most of the time.
- 3 I feel guilty all of the time.

6) Punishment Feelings

- 0 I don't feel I am being punished.
- 1 I feel I may be punished.
- 2 I expect to be punished.
- 3 I feel I am being punished.

7) Self-Dislike

- 0 I feel the same about myself as ever.
- 1 I have lost confidence in myself.
- 2 I am disappointed in myself.
- 3 I dislike myself.

8) Self-Criticalness

- 0 I don't criticize or blame myself more than usual.
- 1 I am more critical of myself than I used to be.
- 2 I criticize myself for all of my faults.
- 3 I blame myself for everything bad that happens.

9) Suicidal Thoughts or Wishes

- 0 I don't have any thoughts of killing myself.
- 1 I have thoughts of harming myself, but I would not carry them out.
- 2 I would like to kill myself.
- 3 I would kill myself if I had the chance.

10) Crying

- 0 I don't cry any more than I used to.
- 1 I cry more than I used to.
- 2 I cry over every little thing.
- 3 I feel like crying, but I can't.

11) Agitation

- 0 I am no more restless or wound up than usual.
- 1 I feel more restless or wound up than usual.
- 2 I am so restless or agitated that it's hard to stay still.
- 3 I am so restless or agitated that I have to keep moving or doing something.

12) Loss of Interest

- 0 I have not lost interest in other people or activities.
- 1 I am less interested in other people or things than before.
- 2 I have lost most of my interest in other people or things.
- 3 It's hard to get interested in anything.

13) Indecisiveness

- 0 I make decisions about as well as ever.
- 1 I find it more difficult to make decisions than usual.
- 2 I have much greater difficulty in making decisions than I used to.
- 3 I have trouble making any decisions.

14) Worthlessness

- 0 I do not feel I am worthless.
- 1 I don't consider myself as worthwhile and useful as I used to.
- 2 I feel more worthless as compared to other people.
- 3 I feel utterly worthless.

15) Loss of Energy

- 0 I have as much energy as ever.
- 1 I have less energy than I used to have.
- 2 I don't have energy to do very much.
- 3 I don't have enough energy to do anything.

16) Changes in Sleeping Pattern

- 0 I have not experienced any change in my sleeping pattern.
-

- 1a I sleep somewhat more than usual.

- 1b I sleep somewhat less than usual.

- 2a I sleep a lot more than usual.

- 2b I sleep a lot less than usual.

- 3a I sleep most of the day.

- 3b I wake up 1-2 hours early and can't get back to sleep.

17) Irritability

- 0 I am no more irritable than usual.
- 1 I am more irritable than usual.
- 2 I am much more irritable than usual.
- 3 I am irritable all the time.

18) Changes in Appetite

- 0 I have not experienced any change in my appetite.
-

- 1a My appetite is somewhat less than usual.

- 1b My appetite is somewhat greater than usual.

- 2a My appetite is much less than before.

- 2b My appetite is much greater than usual.

- 3a I have no appetite at all.

- 3b I crave food all the time.

19) Concentration Difficulty

- 0 I can concentrate as well as ever.
- 1 I can't concentrate as well as usual.
- 2 It's hard to keep my mind on anything for very long.
- 3 I find I can't concentrate on anything.

20) Tiredness or Fatigue

- 0 I am no more tired or fatigued than usual.
- 1 I get more tired or fatigued more easily than usual.
- 2 I am too tired or fatigued to do a lot of the things I used to do.
- 3 I am too tired or fatigued to do most of the things I used to do.

21) Loss of Interest in Sex

- 0 I have not noticed any recent changes in my interest in sex.
- 1 I am less interested in sex than I used to be.
- 2 I am much less interested in sex now.
- 3 I have lost interest in sex completely.

Please review your responses and verify that you have marked at least one statement in each set.

Appendix B. Beck Anxiety Inventory.

A list of common symptoms of anxiety will be presented. Indicate how much you have been bothered by each symptom during the PAST WEEK, INCLUDING TODAY by choosing the number of the corresponding description beneath the symptom.

	0	1	2	3	4
	Not at all	Mildly	Moderately: It did not bother me	Severely: It was very unpleasant, but I could stand it	I could barely stand it
1. Numbness or tingling	0	1	2	3	4
2. Feeling hot	0	1	2	3	4
3. Wobbliness in legs	0	1	2	3	4
4. Unable to relax	0	1	2	3	4
5. Fear of the worst happening	0	1	2	3	4
6. Dizzy or lightheaded	0	1	2	3	4
7. Heart pounding or racing	0	1	2	3	4
8. Unsteady	0	1	2	3	4
9. Terrified	0	1	2	3	4
10. Nervous	0	1	2	3	4
11. Feeling of choking	0	1	2	3	4
12. Hands trembling	0	1	2	3	4
13. Shaky	0	1	2	3	4
14. Fear of losing control	0	1	2	3	4
15. Difficulty breathing	0	1	2	3	4
16. Fear of dying	0	1	2	3	4
17. Scared	0	1	2	3	4
18. Indigestion or discomfort in abdomen	0	1	2	3	4
19. Faint	0	1	2	3	4
20. Face flushed	0	1	2	3	4
21. Sweating (not due to heat)	0	1	2	3	4

Appendix C. Parental Bonding Instrument.

This questionnaire lists various attitudes and behaviors of parents. Please mark the column that most appropriately reflects how you remember your mother during your first 16 years.

MOTHER:	Very Like	Some What Like	Some What Unlike	Very Unlike
1. Spoke to me with a warm and friendly voice	()	()	()	()
2. Did not help me as much as I needed	()	()	()	()
3. Let me do those things I liked doing	()	()	()	()
4. Seemed emotionally cold to me	()	()	()	()
5. Appeared to understand my problems and worries	()	()	()	()
6. Was affectionate to me	()	()	()	()
7. Liked me to make my own decisions	()	()	()	()
8. Did not want me to grow up	()	()	()	()
9. Tried to control everything I did	()	()	()	()
10. Invaded my privacy	()	()	()	()
11. Enjoyed talking things over with me	()	()	()	()
12. Frequently smiled at me	()	()	()	()
13. Tended to baby me	()	()	()	()
14. Did not seem to understand what I needed or wanted	()	()	()	()
15. Let me decide things for myself	()	()	()	()
16. Made me feel I wasn't wanted	()	()	()	()
17. Could make me feel better when I was upset	()	()	()	()
18. Did not talk with me very much	()	()	()	()
19. Tried to make me dependent on her	()	()	()	()
20. Felt I could not look after myself unless she was around	()	()	()	()
21. Gave me as much freedom as I wanted	()	()	()	()
22. Let me go out as often as I wanted	()	()	()	()
23. Was overprotective of me	()	()	()	()
24. Did not praise me	()	()	()	()
25. Let me dress in any way I pleased	()	()	()	()

FATHER:	Very Like	Some What Like	Some What Unlike	Very Unlike
1. Spoke to me with a warm and friendly voice	()	()	()	()
2. Did not help me as much as I needed	()	()	()	()
3. Let me do those things I liked doing	()	()	()	()
4. Seemed emotionally cold to me	()	()	()	()
5. Appeared to understand my problems and worries	()	()	()	()
6. Was affectionate to me	()	()	()	()
7. Liked me to make my own decisions	()	()	()	()
8. Did not want me to grow up	()	()	()	()
9. Tried to control everything I did	()	()	()	()
10. Invaded my privacy	()	()	()	()
11. Enjoyed talking things over with me	()	()	()	()
12. Frequently smiled at me	()	()	()	()
13. Tended to baby me	()	()	()	()
14. Did not seem to understand what I needed or wanted	()	()	()	()
15. Let me decide things for myself	()	()	()	()
16. Made me feel I wasn't wanted	()	()	()	()
17. Could make me feel better when I was upset	()	()	()	()
18. Did not talk with me very much	()	()	()	()
19. Tried to make me dependent on him	()	()	()	()
20. Felt I could not look after myself unless he was around	()	()	()	()
21. Gave me as much freedom as I wanted	()	()	()	()
22. Let me go out as often as I wanted	()	()	()	()
23. Was overprotective of me	()	()	()	()
24. Did not praise me	()	()	()	()
25. Let me dress in any way I pleased	()	()	()	()

Appendix D. Level of Expressed Emotion scale.

Cole & Kazarian

Instructions:

Listed below are a number of statements that describe the way in which someone may act toward you. Please choose the parent (mother OR father) who has been most influential in your life.

1. Indicate whether your most influential parent is your mother or father.

1	Mother	2	Father
---	--------	---	--------

2. How many waking hours on a typical weekday have you been spending with your influential parent during the past three months?

_____ hours

3. How many waking hours on a typical weekend have you been spending with your influential parent during the past three months?

hours

Now read each statement and indicate whether this parent has acted in these ways towards you by choosing a response of:

1	2	3	4
Never	Sometimes	Almost Always	Always

- | | | | | | |
|-----|--|---|---|---|---|
| 4. | Understands if sometimes I don't want to talk | 1 | 2 | 3 | 4 |
| 5. | Calms me down when I'm upset | 1 | 2 | 3 | 4 |
| 6. | Says I lack self-control | 1 | 2 | 3 | 4 |
| 7. | Is tolerant with me even when I'm not meeting his/her expectations | 1 | 2 | 3 | 4 |
| 8. | Doesn't butt into my conversations | 1 | 2 | 3 | 4 |
| 9. | Doesn't make me nervous | 1 | 2 | 3 | 4 |
| 10. | Says I just want attention when I say I'm not well | 1 | 2 | 3 | 4 |
| 11. | Makes me feel guilty for not meeting his/her expectations | 1 | 2 | 3 | 4 |
| 12. | Isn't overprotective with me | 1 | 2 | 3 | 4 |
| 13. | Loses his/her temper when I'm not feeling well | 1 | 2 | 3 | 4 |
| 14. | Is sympathetic toward me when I'm ill or upset | 1 | 2 | 3 | 4 |
| 15. | Can see my point of view | 1 | 2 | 3 | 4 |
| 16. | Is always interfering | 1 | 2 | 3 | 4 |
| 17. | Doesn't panic when things start going wrong | 1 | 2 | 3 | 4 |
| 18. | Encourages me to seek outside help when I'm not feeling well | 1 | 2 | 3 | 4 |
| 19. | Doesn't feel that I'm causing him/her a lot of trouble | 1 | 2 | 3 | 4 |
| 20. | Doesn't insist on doing things with me | 1 | 2 | 3 | 4 |
| 21. | Can't think straight when things go wrong | 1 | 2 | 3 | 4 |

22.	Doesn't help me when I'm upset or feeling unwell	1	2	3	4
23.	Puts me down if I don't live up to his/her expectations	1	2	3	4
24.	Doesn't insist on being with me all the time	1	2	3	4
25.	Blames me for things not going well	1	2	3	4
26.	Makes me feel valuable as a person	1	2	3	4
27.	Can't stand it when I'm upset	1	2	3	4
28.	Leaves me feeling overwhelmed	1	2	3	4
29.	Doesn't know how to handle my feelings when I'm not feeling well	1	2	3	4
30.	Says I cause my troubles to occur in order to get back at him/her	1	2	3	4
31.	Understands my limitations	1	2	3	4
32.	Often checks up on me to see what I'm doing	1	2	3	4
33.	Is able to be in control in stressful situations	1	2	3	4
34.	Tries to make me feel better when I'm upset or ill	1	2	3	4
35.	Is realistic about what I can and cannot do	1	2	3	4
36.	Is always nosing into my business	1	2	3	4
37.	Hears me out	1	2	3	4
38.	Says it's not OK to seek professional help	1	2	3	4
39.	Gets angry with me when things don't go right	1	2	3	4
40.	Always has to know everything about me	1	2	3	4
41.	Makes me feel relaxed when he/she is around	1	2	3	4
42.	Accuses me of exaggerating when I say I'm unwell	1	2	3	4
43.	Will take it easy with me, even if things aren't going right	1	2	3	4
44.	Insists on knowing where I'm going	1	2	3	4
45.	Gets angry with me for no reason	1	2	3	4
46.	Is considerate when I'm ill or upset	1	2	3	4
47.	Supports me when I need it	1	2	3	4
48.	Butts into my private matters	1	2	3	4
49.	Can cope well with stress	1	2	3	4
50.	Is willing to gain more information to understand my condition, when I'm not feeling well	1	2	3	4
51.	Is understanding if I make mistakes	1	2	3	4
52.	Doesn't pry into my life	1	2	3	4
53.	Is impatient with me when I'm not well	1	2	3	4
54.	Doesn't blame me when I'm feeling unwell	1	2	3	4
55.	Expects too much from me	1	2	3	4
56.	Doesn't ask a lot of personal questions	1	2	3	4
57.	Makes matters worse when things aren't going well	1	2	3	4
58.	Often accuses me of making things up when I'm not feeling well	1	2	3	4
59.	"Flies off the handle" when I don't do something well	1	2	3	4
60.	Gets upset when I don't check in with him/her	1	2	3	4
61.	Gets irritated when things don't go right	1	2	3	4
62.	Tries to reassure me when I'm not feeling well	1	2	3	4
63.	Expects the same level of effort from me, even if I don't feel well	1	2	3	4

Appendix E. Dysfunctional Attitudes Scale.

This questionnaire lists different attitudes or beliefs which people sometimes hold. Read each statement carefully and decide how much you agree or disagree with the statement.

For each of the attitudes, indicate to the left of the item the number that best describes how you think. Be sure to choose only one answer for each attitude. Because people are different, there is no right answer or wrong answer to these statements. Your answers are confidential, so please do not put your name on this sheet.

To decide whether a given attitude is typical of your way of looking at things, simply keep in mind what you are like most of the time.

	1	2	3	4	5	6	7
	totally	agree	agree	neutral	disagree	disagree	totally
	agree	very much	slightly		slightly	very much	disagree
_____ 1.							
_____ 2.							
_____ 3.							
_____ 4.							
_____ 5.							
_____ 6.							
_____ 7.							
_____ 8.							
_____ 9.							
_____ 10.							
_____ 11.							
_____ 12.							
_____ 13.							
_____ 14.							
_____ 15.							
_____ 16.							

1	2	3	4	5	6	7
totally agree	agree very much	agree slightly	neutral	disagree slightly	disagree very much	disagree totally
_____	17.	One can get pleasure from an activity regardless of the end result.				
_____	18.	People should have a chance to succeed before doing anything.				
_____	19.	My value as a person depends greatly on what others think of me.				
_____	20.	If I don't set the highest standards for myself, I am likely to end up a second-rate person.				
_____	21.	If I am to be a worthwhile person, I must be the best in at least one way.				
_____	22.	People who have good ideas are better than those who do not.				
_____	23.	I should be upset if I make a mistake.				
_____	24.	My own opinions of myself are more important than others' opinions of me.				
_____	25.	To be a good, moral, worthwhile person, I must help everyone who needs it.				
_____	26.	If I ask a question, it makes me look stupid.				
_____	27.	It is awful to be put down by people important to you.				
_____	28.	If you don't have other people to lean on, you are going to be sad.				
_____	29.	I can reach important goals without pushing myself.				
_____	30.	It is possible for a person to be scolded and not get upset.				
_____	31.	I cannot trust other people because they might be cruel to me.				
_____	32.	If others dislike you, you cannot be happy.				
_____	33.	It is best to give up your own interests in order to please other people.				
_____	34.	My happiness depends more on other people than it does on me.				
_____	35.	I do not need the approval of other people in order to be happy.				
_____	36.	If a person avoids problems, the problems tend to go away.				
_____	37.	I can be happy even if I miss out on many of the good things in life.				
_____	38.	What other people think about me is very important.				
_____	39.	Being alone leads to unhappiness.				
_____	40.	I can find happiness without being loved by another person.				

Appendix F. Anxiety Sensitivity Index.

Please circle the number that describes the degree to which each statement describes you.

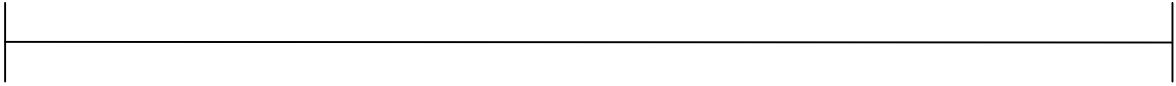
Much	Very Little					Very				
	0	1	2	3	4	0	1	2	3	4
1. It is important to me not to appear nervous	0	1	2	3	4					
2. When I cannot keep my mind on a task, I worry that I might be going crazy	0	1	2	3	4					
3. It scares me when I feel “shaky” (trembling)	0	1	2	3	4					
4. It scares me when I feel faint	0	1	2	3	4					
5. It is important for me to stay in control of my emotions	0	1	2	3	4					
6. It scares me when my heart beats rapidly	0	1	2	3	4					
7. It embarrasses me when my stomach growls	0	1	2	3	4					
8. It scares me when I am nauseous	0	1	2	3	4					
9. When I notice that my heart is beating rapidly, I worry that I might have a heart attack	0	1	2	3	4					
10. It scares me when I am short of breath	0	1	2	3	4					
11. When my stomach is upset, I worry that I might be seriously ill	0	1	2	3	4					
12. It scares me when I am unable to keep my mind on a task	0	1	2	3	4					
13. Other people notice when I feel shaky	0	1	2	3	4					
14. Unusual body sensations scare me	0	1	2	3	4					
15. When I am nervous, I worry that I am mentally ill	0	1	2	3	4					
16. It scares me when I am nervous	0	1	2	3	4					

Appendix G. Visual Analogue Scale.

Please place an X on the line below indicating how you feel at the moment.

SAD

NOT SAD

A horizontal line with vertical end caps, representing a visual analogue scale for mood. The line is positioned between the labels 'SAD' and 'NOT SAD'.

Appendix H. Family History Screen.

Subject # _____

Date: _____

The following questions ask about your immediate family (parents and siblings). Please answer each question to the best of your ability by checking the box that best describes your answer.

Do you have any siblings? ☐ Yes ☐ No

Did you live with both biological parents growing up? ☐ Yes ☐ No
If no, whom did you live with?

Please answer the following questions about your immediate biological family by checking the box to the left of the appropriate answer.

1. Has anyone in your family ever had a serious mental illness, emotional problem, or nervous breakdown?

☐ Mother ☐ Father ☐ Sibling 1 ☐ Sibling 2 ☐ Sibling 3 ☐ Don't know
☐ Other (please list) _____ ☐ No one

2. Has anyone in your family ever seen a psychiatrist, psychologist, social worker, doctor, or other health professional for a psychological or emotional problem?

☐ Mother ☐ Father ☐ Sibling 1 ☐ Sibling 2 ☐ Sibling 3 ☐ Don't know
☐ Other (please list) _____ ☐ No one

3. Has anyone in your family ever stayed overnight or longer in a hospital or treatment facility because of any mental or emotional problem?

☐ Mother ☐ Father ☐ Sibling 1 ☐ Sibling 2 ☐ Sibling 3 ☐ Don't know
☐ Other (please list) _____ ☐ No one

4. Has anyone in your family ever stayed overnight or longer in a hospital or treatment facility because of a drug or alcohol problem?

☐ Mother ☐ Father ☐ Sibling 1 ☐ Sibling 2 ☐ Sibling 3 ☐ Don't know
☐ Other (please list) _____ ☐ No one

5. Has a doctor ever given anyone in your family any medicine for a psychological or emotional problem?

☐ Mother ☐ Father ☐ Sibling 1 ☐ Sibling 2 ☐ Sibling 3 ☐ Don't know
☐ Other (please list) _____ ☐ No one

6. Has anyone in your family ever had difficulty carrying out their usual responsibilities, such as working, going to school, or taking care of the family or household?

- ☐ Mother ☐ Father ☐ Sibling 1 ☐ Sibling 2 ☐ Sibling 3 ☐ Don't know
☐ Other (please list) _____ ☐ No one

7. Has anyone in your family ever been unable to carry out their usual responsibilities for a week or more and not because of a physical illness?

- ☐ Mother ☐ Father ☐ Sibling 1 ☐ Sibling 2 ☐ Sibling 3 ☐ Don't know
☐ Other (please list) _____ ☐ No one

8. Has anyone in your family ever felt sad, blue, or depressed for most of the time for two days or more?

- ☐ Mother ☐ Father ☐ Sibling 1 ☐ Sibling 2 ☐ Sibling 3 ☐ Don't know
☐ Other (please list) _____ ☐ No one

9. Without including times of physical illness or mourning after a death, has anyone in your family had a period of time during which they felt sad, blue or depressed that lasted two weeks or more?

- ☐ Mother ☐ Father ☐ Sibling 1 ☐ Sibling 2 ☐ Sibling 3 ☐ Don't know
☐ Other (please list) _____ ☐ No one

10. Has anyone in your family ever had a period of feeling quite tired, having less energy, or not caring about their usual activities?

- ☐ Mother ☐ Father ☐ Sibling 1 ☐ Sibling 2 ☐ Sibling 3 ☐ Don't know
☐ Other (please list) _____ ☐ No one

11. Not including times of physical illness or mourning after a death, did anyone in your family feel very tired most of the time, have no energy, or not care about their usual activities, for at least two weeks?

- ☐ Mother ☐ Father ☐ Sibling 1 ☐ Sibling 2 ☐ Sibling 3 ☐ Don't know
☐ Other (please list) _____ ☐ No one

12. Has anyone in your family ever had sleep problems, like trouble falling asleep, waking up too early, or sleeping too much?

- ☐ Mother ☐ Father ☐ Sibling 1 ☐ Sibling 2 ☐ Sibling 3 ☐ Don't know
☐ Other (please list) _____ ☐ No one

13. Has anyone in your family ever had sleep problems that caused a change in sleep of as much as an hour a night for two weeks or more and not because of a physical illness?

- ☐ Mother ☐ Father ☐ Sibling 1 ☐ Sibling 2 ☐ Sibling 3 ☐ Don't know
☐ Other (please list) _____ ☐ No one

14. Has anyone in your family ever had a period of feeling extremely happy or high?

- ☐ Mother ☐ Father ☐ Sibling 1 ☐ Sibling 2 ☐ Sibling 3 ☐ Don't know
☐ Other (please list) _____ ☐ No one

15. Not because of drugs or alcohol, has anyone in your family ever been unusually happy or “high as a kite,” such that other people worried about them or so that it interfered with carrying out normal responsibilities?

- ☐ Mother ☐ Father ☐ Sibling 1 ☐ Sibling 2 ☐ Sibling 3 ☐ Don't know
☐ Other (please list) _____ ☐ No one

16. Has anyone in your family ever had a period in which they were more active or talkative than normal?

- ☐ Mother ☐ Father ☐ Sibling 1 ☐ Sibling 2 ☐ Sibling 3 ☐ Don't know
☐ Other (please list) _____ ☐ No one

17. Without being under the influence of drugs or alcohol, has anyone in your family had a period of at least two days where they were extremely over-active or talkative, so that people worried about them or so that it interfered with carrying out their usual responsibilities?

- ☐ Mother ☐ Father ☐ Sibling 1 ☐ Sibling 2 ☐ Sibling 3 ☐ Don't know
☐ Other (please list) _____ ☐ No one

18. Has anyone in your family ever had a sudden spell or attack in which they felt frightened or panicked?

- ☐ Mother ☐ Father ☐ Sibling 1 ☐ Sibling 2 ☐ Sibling 3 ☐ Don't know
☐ Other (please list) _____ ☐ No one

19. Has anyone in your family ever had several attacks of extreme fear or panic, even though there was nothing to be afraid of?

- ☐ Mother ☐ Father ☐ Sibling 1 ☐ Sibling 2 ☐ Sibling 3 ☐ Don't know
☐ Other (please list) _____ ☐ No one

20. Has anyone in your family ever had a sudden spell or attack of difficulty breathing or of a rapid heartbeat?

- ☐ Mother ☐ Father ☐ Sibling 1 ☐ Sibling 2 ☐ Sibling 3 ☐ Don't know
☐ Other (please list) _____ ☐ No one

21. Has anyone in your family had several attacks of difficulty breathing or of a rapid heartbeat, not caused by heart problems, exercise, or something that would have terrified most people?

- ☐ Mother ☐ Father ☐ Sibling 1 ☐ Sibling 2 ☐ Sibling 3 ☐ Don't know
☐ Other (please list) _____ ☐ No one

22. Has anyone in your family been so frightened of something (e.g., heights, animals, insects, or blood) that they tried very hard to avoid it?

- ☐ Mother ☐ Father ☐ Sibling 1 ☐ Sibling 2 ☐ Sibling 3 ☐ Don't know
☐ Other (please list) _____ ☐ No one

23. Has anyone in your family ever had a habit of checking, counting, or cleaning things over and over again, so much so that it interfered with their usual activities?

- ☐ Mother ☐ Father ☐ Sibling 1 ☐ Sibling 2 ☐ Sibling 3 ☐ Don't know
☐ Other (please list) _____ ☐ No one

24. Has anyone in your family ever had unpleasant, nagging thoughts, such that they hadn't locked a door when they really had, or that things were dirty when they were really clean?

- ☐ Mother ☐ Father ☐ Sibling 1 ☐ Sibling 2 ☐ Sibling 3 ☐ Don't know
☐ Other (please list) _____ ☐ No one

25. Has anyone in your family ever had unpleasant, nagging thoughts that kept coming back, no matter how hard the person tried to get rid of them?

- ☐ Mother ☐ Father ☐ Sibling 1 ☐ Sibling 2 ☐ Sibling 3 ☐ Don't know
☐ Other (please list) _____ ☐ No one

26. Has anyone in your family ever heard voices or seen visions that other people could not hear or see?

- ☐ Mother ☐ Father ☐ Sibling 1 ☐ Sibling 2 ☐ Sibling 3 ☐ Don't know
☐ Other (please list) _____ ☐ No one

27. Not including experiences caused by alcohol or drugs, or common religious experiences, or a young child with an imaginary playmate, has anyone in your family either clearly and frequently heard voices or seen visions OR ever believed in things that were very unusual and were not true (e.g., that people were plotting against them or that TV programs were sending special messages to them)?

- ☐ Mother ☐ Father ☐ Sibling 1 ☐ Sibling 2 ☐ Sibling 3 ☐ Don't know
☐ Other (please list) _____ ☐ No one

28. Not including beliefs caused by alcohol or drugs, or shared religious experiences, has anyone in your family believed in things that were very unusual and were not true?

- ☐ Mother ☐ Father ☐ Sibling 1 ☐ Sibling 2 ☐ Sibling 3 ☐ Don't know
☐ Other (please list) _____ ☐ No one

29. Has anyone in your family ever had a period in his or her life when they drank a lot?

- ☐ Mother ☐ Father ☐ Sibling 1 ☐ Sibling 2 ☐ Sibling 3 ☐ Don't know
☐ Other (please list) _____ ☐ No one

30. Has anyone in your family had a drinking problem or had people close to them think they had a drinking problem?

- ☐ Mother ☐ Father ☐ Sibling 1 ☐ Sibling 2 ☐ Sibling 3 ☐ Don't know
☐ Other (please list) _____ ☐ No one

31. Has anyone in your family ever had a period in his or her life when they used illegal drugs regularly?

- ☐ Mother ☐ Father ☐ Sibling 1 ☐ Sibling 2 ☐ Sibling 3 ☐ Don't know
☐ Other (please list) _____ ☐ No one

32. Has anyone in your family had a drug problem or had people close to them think they had a drug problem?

- ☐ Mother ☐ Father ☐ Sibling 1 ☐ Sibling 2 ☐ Sibling 3 ☐ Don't know
☐ Other (please list) _____ ☐ No one

33. Has anyone ever tried to kill him or herself or made a suicide attempt?

- ☐ Mother ☐ Father ☐ Sibling 1 ☐ Sibling 2 ☐ Sibling 3 ☐ Don't know
☐ Other (please list) _____ ☐ No one

34. Has anyone in your family ever actually killed him or herself?

- ☐ Mother ☐ Father ☐ Sibling 1 ☐ Sibling 2 ☐ Sibling 3 ☐ Don't know
☐ Other (please list) _____ ☐ No one

Appendix I. Self-Report Structured Clinical Interview for the DSM-IV-TR Mood Module.

Now, try to remember THE WEEK IN YOUR LIFE YOU FELT THE MOST DEPRESSED.

What was the approximate starting and ending date of the episode you have in mind?

began: _____ ended: _____

Circle the number of the one statement that best describes how you felt. Remember to also circle whether you felt that way for MORE or LESS than two weeks.

- 1) 0 I did not feel sad or depressed.
 1 I occasionally felt sad or down.
 2 I felt sad most of the time, but I was able to snap out of it.
 3 I felt sad all the time, and I couldn't snap out of it.
 4 I was so sad or unhappy that I couldn't stand it.

This lasted MORE / LESS than two weeks (circle one)

- 2) 0 My energy level was normal.
 1 My energy level was a little lower than normal.
 2 I got tired more easily and had less energy than is usual.
 3 I got tired from doing almost anything.
 4 I felt tired or exhausted almost all the time.

This lasted MORE / LESS than two weeks (circle one)

- 3) 0 I was not feeling more restless and fidgety than usual.
 1 I felt a little more restless or fidgety than usual.
 2 I was very fidgety, and I had some difficulty sitting still in a chair.
 3 I was extremely fidgety, and I paced a little bit almost everyday.
 4 I paced more than an hour per day, and I couldn't sit still.

This lasted MORE / LESS than two weeks (circle one)

- 4) 0 I did not talk or move more slowly than usual.
 1 I talked a little slower than usual.
 2 I spoke slower than usual, and it took me longer to respond to questions, but I could still carry on a normal conversation.
 3 Normal conversations were difficult for me because it was hard to start talking.
 4 I felt extremely slowed down physically, like I was stuck in mud.

This lasted MORE / LESS than two weeks (circle one)

- 5) 0 I did not lose interest in my usual activities.
 1 I was a little less interested in 1 or 2 of my usual activities.
 2 I was less interested in several of my usual activities.
 3 I lost most of my interest in almost all of my usual activities.
 4 I lost interest in all of my usual activities.

This lasted MORE / LESS than two weeks (circle one)

- 6) 0 I got as much pleasure out of my usual activities as usual.
 1 I got a little less pleasure from 1 or 2 of my usual activities.
 2 I got less pleasure from several of my usual activities.
 3 I got almost no pleasure from several of my usual activities.
 4 I got no pleasure from any of the activities which I usually enjoy.

This lasted MORE / LESS than two weeks (circle one)

- 7) 0 My interest in sex was normal.
 1 I was only slightly less interested in sex than usual.
 2 There was a noticeable decrease in any interest in sex.
 3 I was much less interested in sex then.
 4 I lost all interest in sex.

This lasted MORE / LESS than two weeks (circle one)

- 8) 0 I did not feel guilty.
 1 I occasionally felt a little guilty.
 2 I often felt guilty.
 3 I felt quite guilty most of the time.
 4 I felt extremely guilty most of the time.

This lasted MORE / LESS than two weeks (circle one)

- 9) 0 I did not feel like a failure.
 1 My opinion of myself was occasionally a little low.
 2 I felt I was inferior to most people.
 3 I felt like a failure.
 4 I felt I was a totally worthless person.

This lasted MORE / LESS than two weeks (circle one)

- 10) 0 I didn't have any thoughts of death or suicide.
- 1 I occasionally thought life was not worth living.
 - 2 I frequently thought of dying in passive ways (such as going to sleep and not waking up) or that I'd be better off dead.
 - 3 I had frequently thoughts of killing myself.
 - 4 I tried to kill myself.

This lasted MORE / LESS than two weeks (circle one)

- 11) 0 I could concentrate as well as usual.
- 1 My ability to concentrate was lightly worse than usual.
 - 2 My attention span was not as good as usual and I had difficulty collecting my thoughts; but this didn't cause any problems.
 - 3 My ability to read or hold a conversation was not as good as usual.
 - 4 I could not read, watch TV, or have a conversation without great difficulty.

This lasted MORE / LESS than two weeks (circle one)

- 12) 0 I made decisions as well as usual.
- 1 Decision making was slightly more difficult than usual.
 - 2 It was harder and took longer to make decisions, but I did make them.
 - 3 I was unable to make some decisions.
 - 4 I couldn't make any decisions at all.

This lasted MORE / LESS than two weeks (circle one)

- 13) 0 My appetite was not less than normal.
- 1 My appetite was slightly worse than usual.
 - 2 My appetite was clearly not as good as usual, but I still ate.
 - 3 My appetite was much worse.
 - 4 I had no appetite at all, and I had to force myself to eat even a little.

This lasted MORE / LESS than two weeks (circle one)

- 14) 0 I didn't lose any weight.
- 1 I lost less than 5 pounds.
 - 2 I lost between 5-10 pounds.
 - 3 I lost between 11-25 pounds.
 - 4 I lost more than 25 pounds.

This lasted MORE / LESS than two weeks (circle one)

- 15) 0 My appetite was not greater than normal.
1 My appetite was slightly greater than usual.
2 My appetite was clearly greater than usual.
3 My appetite was much greater than usual.
4 I felt hungry all the time.

This lasted MORE / LESS than two weeks (circle one)

- 16) 0 I didn't gain any weight.
1 I gained less than 5 pounds.
2 I gained between 5-10 pounds.
3 I gained between 11-25 pounds.
4 I gained more than 25 pounds.

This lasted MORE / LESS than two weeks (circle one)

- 17) 0 I was not sleeping less than usual.
1 I occasionally had light difficulty sleeping.
2 I clearly didn't sleep as well as usual.
3 I slept about half my normal amount of time.
4 I slept less than 2 hours per night.

This lasted MORE / LESS than two weeks (circle one)

- 18) 0 I was not sleeping more than normal.
1 I occasionally slept more than usual.
2 I frequently slept at least 1 hour more than usual.
3 I frequently slept at least 2 hours more than usual.
4 I frequently slept at least 3 hours more than usual.

This lasted MORE / LESS than two weeks (circle one)

- 19) 0 I did not feel anxious, nervous, or tense.
1 I occasionally felt a little anxious.
2 I often felt anxious.
3 I felt anxious most of the time.
4 I felt terrified and near panic.

This lasted MORE / LESS than two weeks (circle one)

- 20) 0 I did not feel discouraged about the future.
 1 I occasionally felt a little discouraged about the future.
 2 I often felt discouraged about the future.
 3 I felt very discouraged about the future most of the time.
 4 I felt that the future was hopeless and that things would never improve.

This lasted MORE / LESS than two weeks (circle one)

- 21) 0 I did not feel irritated or annoyed.
 1 I occasionally got a little more irritated than usual.
 2 I got irritated or annoyed by things that usually didn't bother me.
 3 I felt irritated or annoyed almost all the time.
 4 I felt so depressed that I didn't get irritated at all by things that would normally bother me.

This lasted MORE / LESS than two weeks (circle one)

- 22) 0 I was not worried about my physical health.
 1 I was occasionally concerned about bodily aches and pains.
 2 I was worried about my physical health.
 3 I was very worried about my physical health.
 4 I was so worried about my physical health that I could not think about anything else.

This lasted MORE / LESS than two weeks (circle one)

- 23) 0 This bout of depression is the only one I have ever had.
 1 I have had an additional period of depression similar to the one I already described.
 2 I have had two more periods of depression similar to the one I already described.
 3 I have had three more periods of depression similar to the one I already described.
 4 I have had four or more periods of depression similar to the one I already described.

- 24) 0 I did not get any treatment for how I felt.
 1 I got psychotherapy, but did not take anti-depressant medication.
 2 I took anti-depressant medication, but did not get psychotherapy.
 3 I got psychotherapy and took anti-depressant medication(s).
 4 I was admitted to a psychiatric hospital for treatment.

Appendix J. Demographics Form.

Please answer the following questions by writing in the answers.

What is the highest level of education you have completed (high school = 12 years, first semester of college = 12.5, freshman year of college = 13)? _____

How old are you? _____

Please circle the response(s) that best describes your answer.

What gender do you identify with? Male Female

What ethnicity do you identify with?

Caucasian Hispanic/Latino African-American Pacific Islander

Native American Asian Other (please describe): _____